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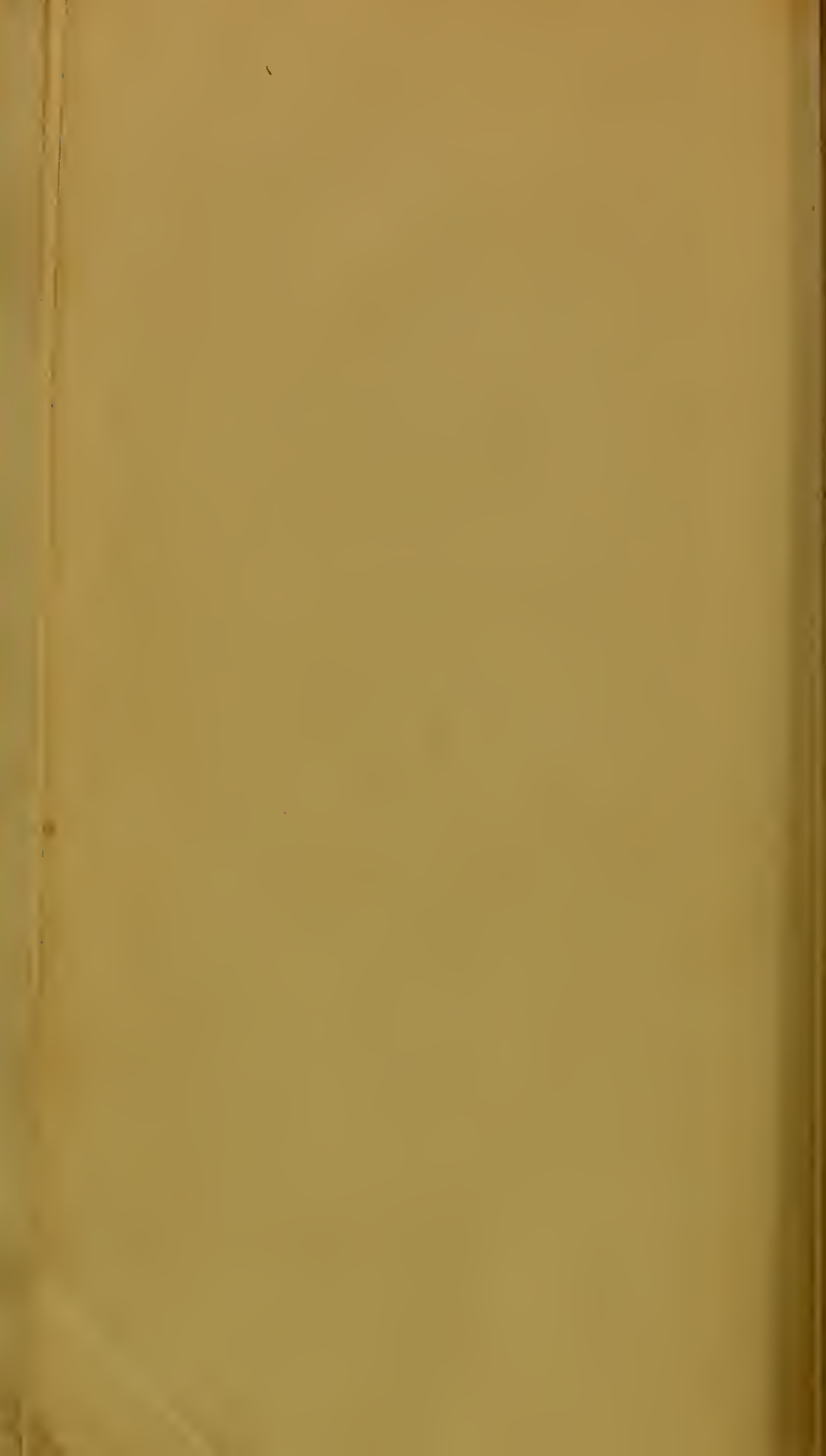
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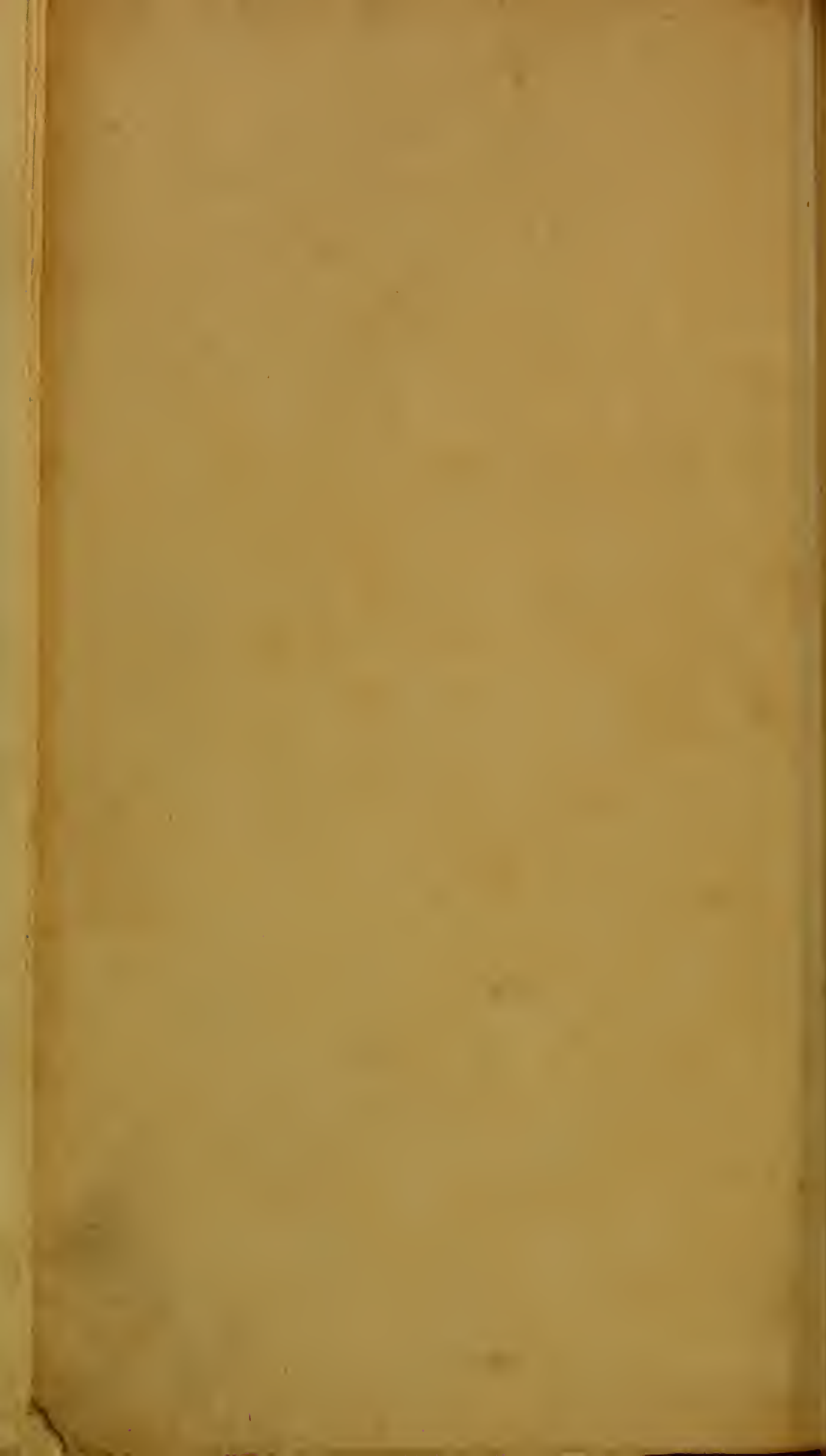




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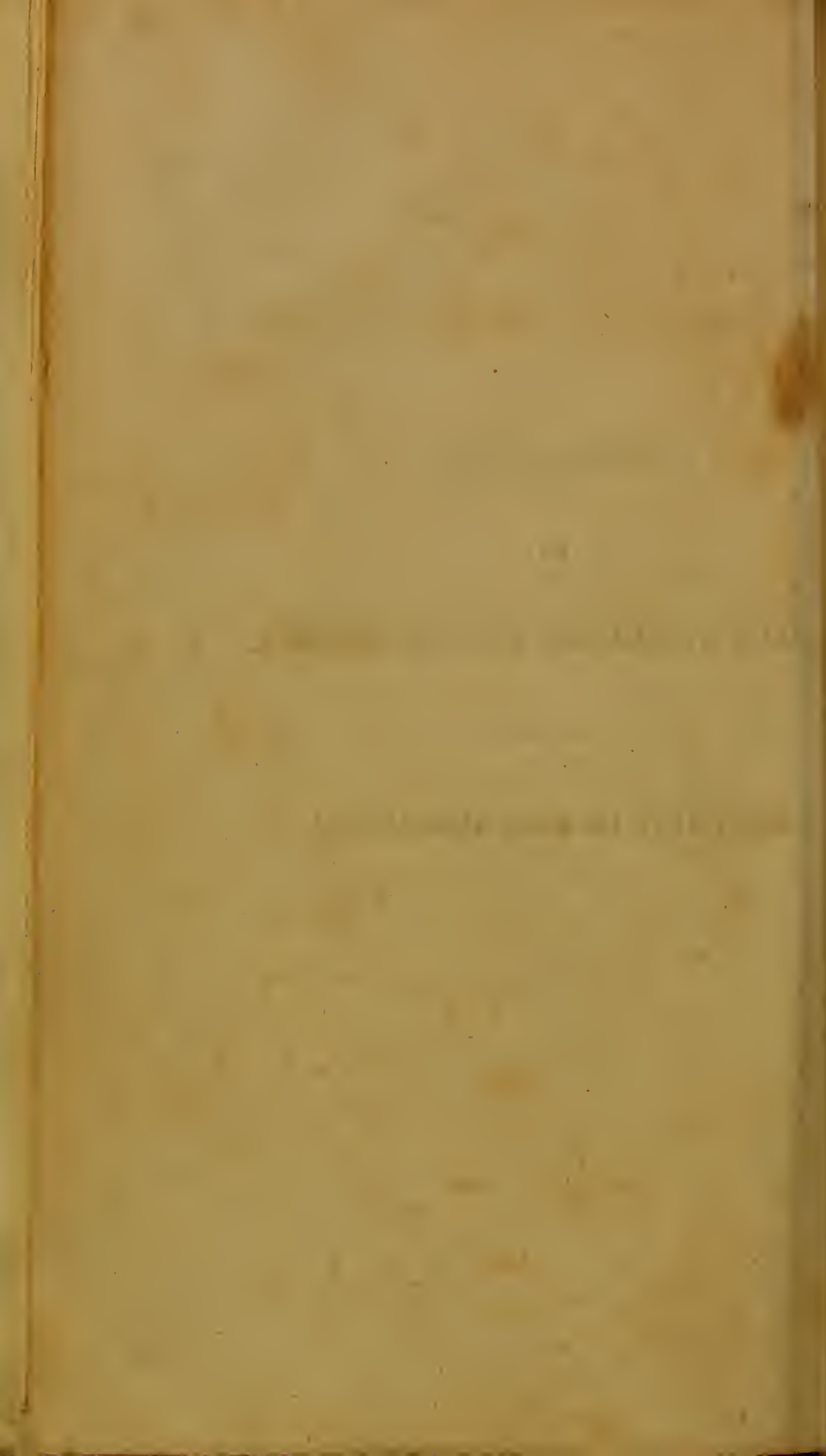
DISSERTATIONS

ON

WHITE SWELLING OF THE JOINTS,

AND THE

DOCTRINE OF INFLAMMATION.



DISSERTATIONS
ON
WHITE SWELLING
OF THE
JOINTS,
AND THE
DOCTRINE OF INFLAMMATION.

BY JOHN HERDMAN, M.D.
FELLOW OF THE ROYAL COLLEGE OF SURGEONS
OF EDINBURGH.

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TO

GEORGE WOOD, Esq.

SURGEON.



SIR,

PERMIT me to inscribe the following Dissertations to you.

IN doing this, I am not more influenced by motives of private friendship, than by a sense of your professional abilities, as well as by your liberal and honourable conduct in the exercise of your professional duties. Engaged in a most useful profession, and in a very extensive practice, on all occasions you acquit yourself as the importance of its duties demands. You follow the example of

your venerable Father. Like him, may you
long enjoy every mark of public confidence
and regard. I am,

SIR,

Your most obedient Servant,

JOHN HERDMAN.

EDINBURGH, }
May 20. 1802. }

P R E F A C E.

I HAVE written the following Dissertations, because I think that the subject of white swelling is ill understood, and the method of cure ill conducted. I have treated of the nature of scrophula, because white swelling is a scrophulous disease. I have examined the grounds on which white swelling has been divided into a scrophulous and a rheumatic species, because I think this division erroneous and

unfounded in the nature of white swelling. I have treated of the doctrine of inflammation, to show that white swelling neither depends on a *phlogistic diathesis*, nor on any thing requiring *antiphlogistic regimen and antiphlogistic practice*. Finally, I have discoursed on the method of cure which should be employed in white swelling.

IN doing these things, I have had occasion to question long-received opinions and practices. If I have criticised too keenly, let the importance of the subject plead my excuse. When the improvement of science, or the good of mankind, is in view, every thing else is out of the question.

IF the opinions and reasonings which I have delivered are well founded, they will stand; if not, they will fall to the ground. Let experience determine the question.

IT will not therefore be understood that I arrogate perfection to these opinions, or that they should bring implicit confidence. I refer them to the judgment of others; and if I have erred, I will cheerfully submit to correction.

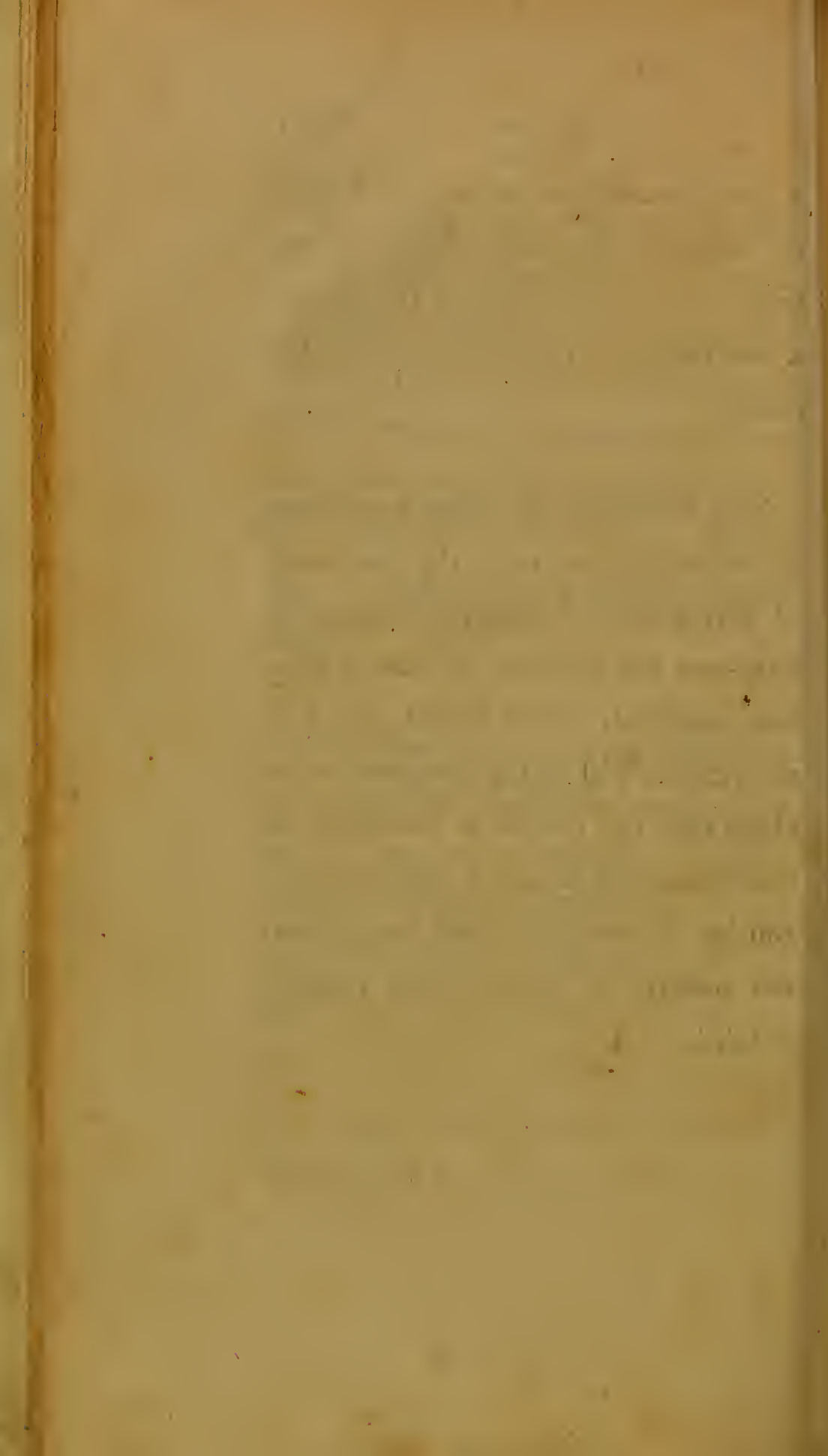
I AM well aware that implicit confidence in the opinions of others has been the very bane of our profession. One man, for example, takes the lead; and while he details the common opi-

nions and practices of the day, he gives them sanction and authority, as it were; he keeps them from falling, and preserves their universal reception; and having been long protected and received, with universal consent, as fixed and established truths, it may seem a sort of heresy to call them in question.

IF not for some cause of this kind, the method of cure hitherto employed in white swelling must have fallen aside. It has no other ground of support; for experience cannot be urged in its defence; and I have endeavoured to show that it is wrong in principle. But should my reasonings be false, experience alone is sufficient to condemn

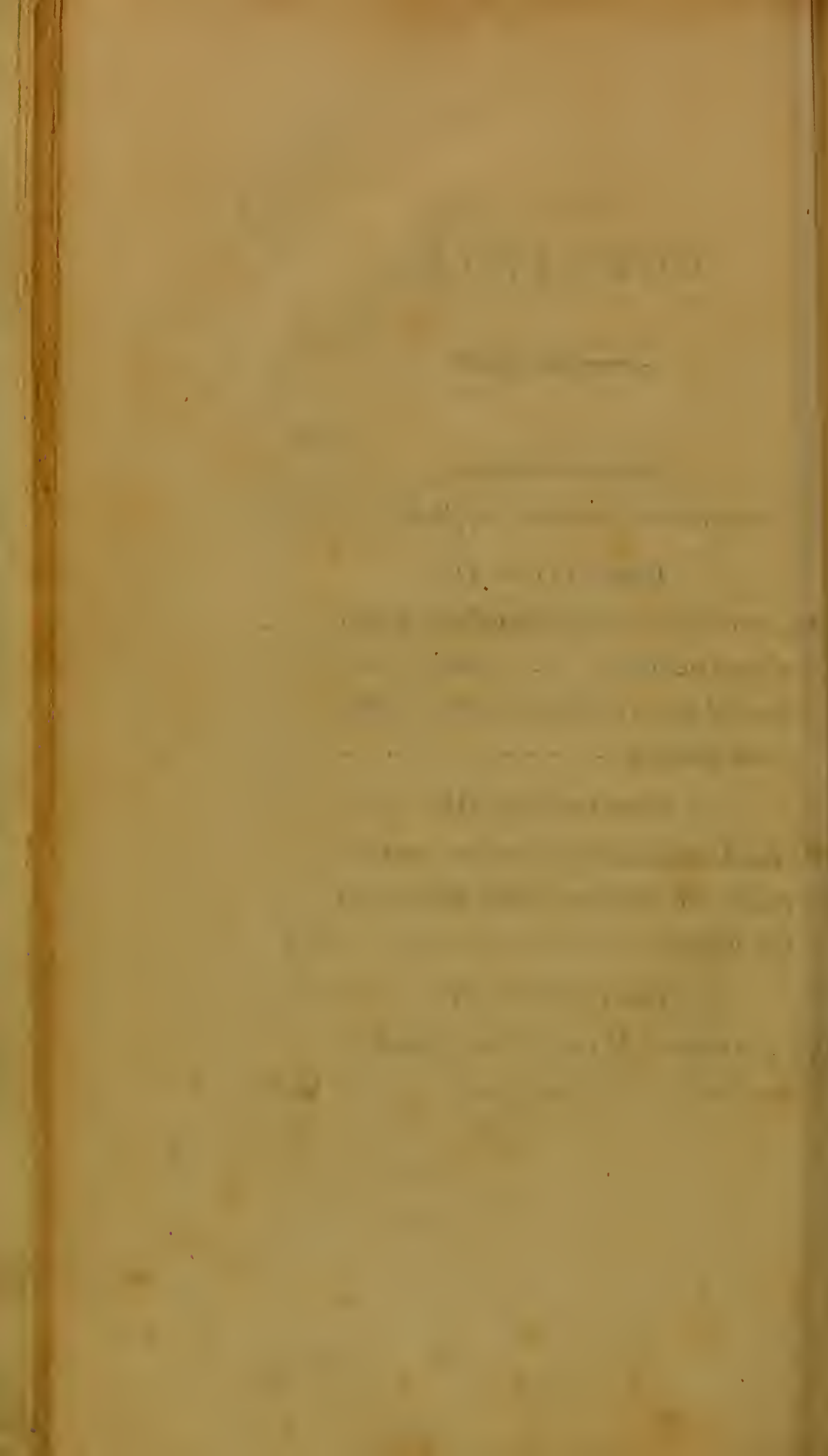
it; and the uniform and universal want of success in the cure of white swelling, is more than sufficient to warrant a revolution in the treatment of this disease.

Now for this very reason, were there no other, let me urge the propriety of giving trial to another method of cure—to the method of cure I have here proposed. If it should also fail, the reasons will be the stronger to conclude that the disease is incurable, or that this mode of cure is also deficient: But let no one draw these conclusions too hastily, or condemn the practice untried.



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DISSERTATIONS

ON

WHITE SWELLING OF THE JOINTS,

AND THE

DOCTRINE OF INFLAMMATION.

DISSERTATION I.

OF THE NATURE AND CURE OF SCROPHULA.

IT is the remark of a modern author, that “the pathology of the simple solids cannot be properly separated from their physiology.” Surely the same remark may be extended to every component part of the animal body. The physiology of both solids and fluids is requisite to elucidate their pathology. If the laws and operations of the living body be not understood in the health-

A

ful state, how is it possible to understand the difference between health and disease—between these operations which constitute health, and those which prevail in the morbid state? Physiology is the direct and natural road to pathology. Where the former ends the latter begins: Yet the line of distinction is not easily drawn. There is little between health and disease—between life and death. But by pursuing and extending the same road of inquiry; by viewing the animal body in its healthful state; by ascertaining its laws and operations; by marking the simplest changes in these operations in passing from health towards the morbid state; and by tracing these changes in their more complicated and varied forms, as constituting the different modifications and phenomena of disease, the ultimate attainment must be a true and solid pathology. This is the way in which it is to be found—the science of physiology naturally leads to it—it is a continuation of the same subject—the pathology cannot be separated from the physiology.

BUT while this position is obvious, it must be admitted that these sciences are still barren and uncultivated. Physiology is still an imperfect science, and pathology abounds in error. The laws and operations of the animal body are but little known; and the different effects of these laws on living and dead matter have not been well distinguished. False analogies have obscured the science of physiology, and retarded its progress. Hence the origin of all the FALSE doctrines, the hypotheses, and errors of pathology; and hence our ignorance of the real nature of the morbid state, or the proximate cause of disease.

IN this state of our knowledge—in this state of the sciences of health and disease—in our ignorance of the laws and operations of the animal body, and of the nature of proximate causes, it becomes necessary to give a different turn to the subject. We must regard the body as connected with, and under the influence of, certain agents, both healthful and morbid. The healthful agents, as heat,

air, and aliment; the intellectual powers, the several instincts, appetites, and passions, the nervous energy and muscular exertion, the blood, and the different fluids secreted from it, &c.—these, operating in due proportion, produce health: But any of them operating either excessively or deficiently deranges the healthful œconomy of the system; and by its disproportionate action produces disease. As morbid agents also are certain animal, vegetable, and mineral poisons and contagions, among which are included certain substances more strictly belonging to the *materia medica*.

If we were acquainted with the qualities and operations of the healthful agents, and with the various effects produced by different degrees of their action; if we possessed the same knowledge with regard to every power in nature capable of producing the morbid state; and if we understood the chemical and mechanical processes which take place in the animal body, and the mode in

which they are produced, we might then ascertain the proximate cause of disease, and be enabled to apply with precision the curative powers. But, in the present state of medical science, we can only, generally speaking, conclude, that the body suffers derangement, either by the excessive or deficient action of the various agents productive of the morbid state; and that different forms or modifications of this derangement occasion the different forms of disease. This is nearly the extent of our knowledge. Yet imperfect as it is, it leaves us not without some help in forming our indications of cure. It suggests an investigation to discover the exciting cause or causes of the disease; it suggests their removal, or the prevention of their action; and, to complete the indication of cure, it suggests the administration of such powers as seem best fitted to produce opposite effects to those which caused the disease. These are leading principles in the science, which proposes the restoration of health, and deserve the strictest attention. They imply a reference to all the

powers in nature capable of producing either health or disease ; a well-regulated induction of facts in ascertaining the causes of the morbid state ; and, lastly, they imply true experience and observation, not only in the choice of the curative agents, but also in the degree of their application. They deserve the strictest attention, because they are safe and sure grounds and rules of conduct: they teach us the extent of our knowledge ; they are a barrier between what may be useful and what is destructive ; they can assist the cautious and prudent physician ; and they ought to set bounds to the rashness of him who treats the human body as if it were invulnerable, or not liable to death ; who practises with as much confidence as if the laws and operations of the animal body were clear and demonstrable as mathematical science, and who boasts in the shedding of blood ; who deals in rash empiricism, and follows a blind routine.

BUT a question here occurs—May not dis-

case exist or take place in the animal body, independent y of the action of exciting causes? Are there, or are there not, hereditary diseases? If no such diseases exist, and if the body diseased has suffered the action of no exciting cause, then it follows that, in some instances, the body is possessed of a *vis morbifica*; a power of generating disease. But if it has no such power, and if there are cases of disease where no exciting cause has operated, the existence of hereditary disease must be admitted. In such cases the body is originally and constitutionally diseased. It has a certain mal-conformation or morbid stamina; a certain degree or kind of imperfect structure. Are there not reasons to conclude, that in nature there exists such a state of the animal body? We find disease without any very obvious exciting cause, or the cause does not seem adequate to the effect. Nay, perhaps we find disease where no exciting cause has previously operated. Of this description scrophula or struma is perhaps the most striking example. This disease has been

reckoned hereditary both by the generality of medical writers and by the vulgar. It appears in the children of scrophulous parents; it takes place without any obvious exciting cause; and often it cannot be removed even by the best directed method of cure. Now as the exciting causes of scrophula cannot always be clearly ascertained; as it seems to take place independently of the operation of such causes; and as it is of such difficult cure, we must infer that it is hereditary; that scrophulous children derive a scrophulous diathesis from their parents; and that it is interwoven, as it were, in the very nature and essence of their constitution. This is most probably the great origin of scrophula: it is an actual scrophulous diathesis; a hereditary disease.

MR WHITE, however, seems to hint, that scrophula is not a hereditary disease: but it is a mere hint. Nay, he has left the matter as he found it; or rather he has brought

proof of the very doctrine which he professes to disprove.

“THAT there is a predisposing cause,” says he, “in different habits to different diseases, is beyond a doubt, generally, according to the different formation of the body: this is so common, that it is universally admitted. As, for example, people of long necks and narrow chests are most liable to catarrh and consumption; and those of short necks and large heads to apoplexy and epilepsy. If this be what is understood by an hereditary disease, I cannot have the final-
lest objection; because it is frequent, and most natural, for children to resemble their parents in person and form; consequently they are most likely, if the same or similar occasional causes should exist, to be afflicted with the different diseases to which their parents were most liable. But no form, age, sex, or complexion, are exempted from struma; and therefore, in this re-

spect, it cannot be considered as an hereditary disease *.”

Now, what is this “predisposing cause in different habits to different disease” and how is it produced? Is it produced by exciting causes, by powers foreign to the body, or by its own functions? Has the body a power of generating a predisposing cause? If it is produced in none of these ways, it necessarily follows, that it is an original quality of the animal constitution: And were it produced by powers foreign to the body, it could not be properly termed a predisposing cause; it is then actual disease, or rather the commencement or a low degree of disease, the first effect of the operation of a hurtful power. In this sense, then, predisposition and disease are one and the same thing, and only different in degree. But the predisposition of which we are speaking is the true predisposi-

* A Treatise on the Struma, or Scrophula, by Thomas White, Surgeon to the London Dispensary.

tion, and must be according to the "formation of the body;" though not in such a conspicuous point of view as "long necks and narrow chests; short necks and large heads." It occupies a more hidden, though no less mischievous, station. It cannot be discovered by any mode of examination hitherto employed. Yet still it is according to the "formation of the body; because it is frequent and most natural for children to resemble their parents in person and form;" internally as well as externally; in their more hidden, as well as in their more obvious, structure; in every the most minute physical disposition of their bodies. "Consequently they are most likely, if the same or similar occasional causes should exist, to be afflicted with the different diseases to which their parents were most liable:" and consequently the children of scrophulous parents are frequently and obviously scrophulous.

BUT we are told, that "no form, age, sex, or complexion, are exempted from struma;"

neither is catarrh and consumption confined to people of long necks and narrow chests, nor apoplexy and epilepsy to those of short necks and large heads. Many who have none of these qualities are also liable to these diseases; and therefore it may be questioned how far they act as predisposing causes. There is surely no manifest or uniform connection between a long neck and catarrh; and a narrow chest will not of itself predispose to consumption if it is a scrophulous disease. A short neck is convenient to explain the hypothesis of a congestion of the blood in the head in apoplexy; and as the seat of epilepsy is referable to the brain, the patient, forsooth, must have a large head. These qualities relate only to person and external form, while the true predisposition is the very cause of that form. But as these diseases are far from being confined to those of such external form, it follows that they must have another predisposing cause, or no such cause at all; at least external form, in an abstract sense, is not the predisposing cause. Hence,

although it should be admitted, that “no form, age, sex, or complexion, are exempted from struma;” yet it does not follow that it has no predisposing cause, or that it is not a hereditary disease.

THIS is the true predisposition, and it is according to the original and hidden formation of the body. It produces the phenomena of disease. It is not the effect of any exciting cause; and is therefore properly termed a state of predisposition. It is the true and only predisposing cause of the disease; and if no such original formation of body exists, there can be no such thing as a predisposing cause. If the body is in any degree deranged by the operation of exciting causes, then it is not predisposition, but a certain degree of disease.

THE use of the term predisposition has been vague and indeterminate, and the doctrine of predisposing causes has not been properly considered. Dr Brown, for example,

has divided all general diseases into two stages—into a state of predisposition and a state of actual disease. The former exists between the action of the exciting cause and the appearance of the phenomena of the disease; and the latter while these phenomena can be distinctly marked. But this is merely an arbitrary distinction, and has nothing to do with the real doctrine of predisposition. And where is the state or period of predisposition in those cases of disease in which the exciting cause operates so powerfully as to produce immediate symptoms of disease, and sometimes instant death? Nay, even in those cases in which a considerable period intervenes between the action of the exciting cause and the appearance of the symptoms, there is no predisposition, nor no state of predisposition. The body has undergone, or is undergoing, the action of the exciting cause: it is in a certain degree deranged by its action, although its morbid operations may not be fully established; although the phenomena indicating disease may not have appeared, it is

gradually or more rapidly passing from a lower to a higher degree of disease; it has no predisposing cause, nor no state of predisposition.

SUPPOSE a state of perfect health; an individual with no hereditary taint, reared from infancy to manhood in the most natural manner; having the most vigorous and healthful constitution: that individual is surely rather predisposed to health than to disease. But suppose him subjected to the action of a powerful morbid agent, poison, contagion, or any thing else, and for the first time diseased; and suppose that he does not regain his pristine vigour, but is now liable to ailments on the slightest occasions—is he or is he not predisposed to disease? He is not, strictly speaking, predisposed to disease, but is actually diseased. He is under a certain degree of disease, though the symptoms of disease may not be strictly manifest. He has a tender and delicate constitution; and all the

effect of a powerful morbid agent : he has no predisposing cause of disease.

THIS is the light in which we would hold the doctrine of this predisposing cause : It is not the effect of morbid agents ; it is according to the original formation of the body, and inherent in the animal structure ; it is of itself productive, or partly productive, of the actual phenomena of disease ; it is not displayed in the external form of the body, but it gives that external form ; it may produce “ long necks and narrow chests, short necks and large heads ; ” it may distort the bones and disfigure the soft parts ; it may produce organic disease, and establish the most incurable fistulas and ulcers ; it may prevent the healing of venereal and other sores, as well as wounds surgical or accidental ; it may affect the vital organs, and even produce the destruction of life. What are schirrus, cancer, and rickets, tabes, and consumption of the lungs ; some inflammations, as of the eyes, &c. ; some tumors both of a

solid and fluid nature ; some ulcers both of the bones and soft parts ; white swelling of the joints, &c. Are they not all connected with a predisposing cause ; a hereditary disposition ; a scrophulous diathesis ? They may not all be strictly scrophulous ; but in as far as all or any of them are not the effect of exciting causes or powers foreign to the body, we must conclude that they are connected with, or dependent on a predisposing cause, and that this cause is according to the original disposition of the body, and inherent in the animal structure.

It were well for mankind that this doctrine were unfounded ; that scrophula were not hereditary, but the sole effect of exciting causes ; and that these causes could be ascertained, and their action prevented in the cure of the disease. Yet that it is strictly hereditary, and that exciting causes are in no degree concerned in the production of its phenomena, is perhaps the worst view of the subject, and not true in fact. Nay, it may

perhaps be questioned whether scrophula, or some form of this disease, is not in some instances the sole effect of exciting causes; and it is highly probable that in many instances the scrophulous diathesis exists only in a low degree; in a degree not sufficient to produce the actual phenomena of the disease, independently of the operation of exciting causes. Besides, even its more severe symptoms are frequently removed either in the œconomy of nature or by art. It follows, therefore, that the prevention, palliation, or removal of its symptoms, will be more or less easily effected in proportion to the degree of the diathesis, the predisposing cause, or in proportion to the degree in which it is, or is not, the effect of exciting causes. And notwithstanding that it is hereditary, that it has a predisposing cause; yet in as much as we can trace the operation of exciting causes in the production of its phenomena, we proceed on the same principles in the cure or removal of these phenomena as in the cure of any other disease.

IN entering, therefore, upon an inquiry concerning the exciting causes of scrophula, we may look back to the most early period of life. At this period the foundation of a vigorous constitution may be laid; a constitution not to be hurt by trivial causes. But, on the other hand, the mismanagement of the infant state is productive of a tender and delicate constitution, liable to ailments on the slightest occasions; a constitution in fact not free from disease. The offspring of the most healthful and vigorous parents may be thus destroyed; of parents with no scrophulous taint in their constitution. But if they are scrophulous, and if their children are thus mismanaged, they also will show symptoms of scrophula, or some form of this disease. Of how much importance, then, is the proper management of the infant state, and more especially of those infants whose parents are scrophulous?

No sooner does an infant breathe the breath of life than he is subjected to the action of

hurtful powers ; of powers which are fitted to derange his delicate frame, and produce disease and death, even where no predisposition exists. He is improperly clothed and exposed to cold ; he has improper food ; and though gorged with food, his body is not nourished ; he has seldom his mother's milk alone, his only natural food, the only food which his stomach can properly digest ; it is conjoined with other substances ; these substances cannot be chylified in the infant stomach ; they prevent the chylification of the milk ; they cause disease in the stomach and bowels ; there is severe and continued diarrhœa, with the most agonising gripes ; the food runs through the bowels undigested ; the source of nourishment is cut off as it were ; a general atrophy takes place, and death succeeds.

BUT if the infant escapes with life, and if he is predisposed to scrophula, disease may take place even more horrible, and perhaps more to be dreaded, than death itself. The

bones may become distorted, and the soft parts disfigured ; there may come rickets, or tabes, or consumption of the lungs ; or glandular and other tumors, both of a solid and fluid nature ; or ulcers, both of the bones and soft parts ; or white swelling of the joints, &c. And if none of these terrible and obstinate affections should take place, at best there will be general emaciation, and a languid or morbid performance of every function. These are the effects of predisposition, and the certain effects of mismanagement during the infant state, superadded to predisposition : And if they can be prevented or palliated, it can only be by the strictest and most natural management of the infant constitution ; by a strict and just application of every power necessary to life and health ; while every power that can derange or debilitate the infant body is most carefully and rigidly withheld.

By this mode of management ; by a strict and just application of all the powers neces-

sary to life and health ; of every power necessary to support the growth and increase the vigour of the body—the scrophulous infant may perhaps be reared from infancy to manhood without any actual scrophulous disease ; and more especially if he is but slightly predisposed to scrophula : Yet, in his progress towards maturity, he has a variety of dangers to encounter besides mismanagement during infancy ; a variety of causes which may derange or debilitate his constitution, and produce the phenomena of scrophula, or some form of this disease. These are, in the general, a low diet, a diet unfit to afford good and sufficient nourishment, and of difficult digestion and assimilation ; impure air, as the air of jails, hospitals, and large towns and manufactories, where a number of people are crowded together ; confinement or deficient exercise ; the want of cleanliness ; and cold, especially cold conjoined with moisture, as in the more northerly climates. To these may be added the deranging and debilitating operation of certain specific poisons and conta-

gions; as of the small-pox, measles, whooping cough, &c. to which diseases scrophulous affections frequently succeed. These are the principal exciting causes of scrophula; and they are all deranging or debilitating powers, from mismanagement during infancy, thro' every period of life: They can in nowise produce vigour or energy in the body; and hence we learn something of the nature of this disease.

THE actions of the scrophulous body are weak, languid, or fluggish; and the functions in general are imperfectly performed. A proper chyle is not prepared to nourish and supply the waste of the body; and the blood not being duly animalized, both the solids and fluids are depraved. There is imperfect assimilation, secretion, and absorption. The lymphatic system in an especial manner partakes of the predisposition.

THIS, then, is the state of the scrophulous body: Its actions are languid; its functions

in general are morbidly performed, though not all so in the same degree ; its solids and fluids are depraved. Hence arises the phenomena of scrophula; and independently perhaps of mismanagement during infancy or of the action of external causes. In other cases, however, the child is mismanaged, or debilitating causes operate. The effects of these causes are superinduced to predisposition; the symptoms of scrophula follow their operation; and these symptoms are caused by a deranged or debilitated state of the scrophulous body.

AGAIN, scrophulous affections most frequently appear in the earlier periods of life, before the age of puberty; and after the body has arrived at maturity, they more rarely occur. During the earlier periods of life, the animal structure is feeble and imperfect. The new matter received into the body is wasted by its growth; but in proportion as the growth of the body is perfected, its structure becomes more vigorous, and now scrophulous affec-

tions seldom take place ; or if they are present, they frequently disappear ; scrophulous ulcers heal, and scrophulous joints ankylose.

FARTHER, the constitutional phenomena of scrophula indicate that the body is deranged or debilitated. Yet it is difficult to detail these phenomena with precision : They are different in different cases. In some cases there is a degree of plumpness or obesity, while in others the body is much emaciated. But obesity, which has been taken as a mark of plethora and vigour, is no proof of any such thing : On the contrary, in proportion to the degree of corpulency, there is a proportional degree of debility ; because the energies of the body are weakened by the very powers productive of corpulency ; and in those cases where such powers do not operate, there is inherent disease. In those cases of scrophula that are attended with a plumpness of the body, general laxity and debility are too manifest ; the actions of the arterial system

are languid ; there is imperfect or morbid secretion ; in short, in every case, whether of plumpness or leanness, the languid actions, the imperfect functions, and every symptom, indicate general laxity and debility.

IF, then, there be any truth in this doctrine ; if external causes are any way concerned in the production of scrophula ; and if these causes are deranging and debilitating in their nature and effects—it follows, that powers of a similar nature, or powers capable of inducing similar effects, are by no means admissible in the cure of the disease. Agents of an opposite nature are surely indicated ; agents capable to restore and increase the vigour of the animal structure ; to render its actions more forcible and its functions more perfect—in short, to produce the most perfect state of vigour of which the scrophulous body is susceptible. This we hold to be a great and leading indication in the cure of the disease, to which every other is only auxiliary or subordinate : yet hitherto per-

haps its importance has neither been properly nor sufficiently considered.

IN the cure of scrophula, as in the cure of most other diseases, random practice, and gross empiricism, have too much prevailed. What is to be expected from burnt sponge, and numerous other substances, equally, if not more insignificant, and as ludicrous in their use, as the most absurd amulet, or the royal touch itself? Yet these are harmless in their nature and effects, when compared to those agents which impoverish and derange the body by powerful evacuation. This practice, to the extent it has been carried, cannot be sufficiently reprobated. It is founded on no sure principle, on no knowledge hitherto obtained of the nature of the disease. The doctrines of the humorial pathology can only be supposed in its defence; the doctrines of acrimonies, viscidities, and lentor—of acids and alkalies—of obstructions in glands and minute vessels—of plethora—of no one knows what—Yet, according to these doctrines, the

fluids were to be attenuated, cleansed, and purified; their gross humours were to be purged away; they were to be diminished in quantity; and all with severe and continued purgings and other evacuations, along with a thin and watery diet. Thus were all obstructions, and all swellings of glands, and every morbid condition, whether of the solids or fluids, to be removed.

ALL this, at first sight, might seem plausible, easily conceived, and convenient to explain the nature and cause of scrophula. It is easy to reason thus: The fluids are gross and viscid, and loaded with humours; they are unfit to pass through glands or other minute vessels; obstructions and congestions must therefore take place, and swellings of glands, and tumors of various kinds. But in this reasoning, the morbid state of the vessels themselves is entirely neglected, and the real morbid condition of the fluids is not explained: Yet we are learned a most decided and active practice. The fluids are to be

oppressed!! +

+ No one but an ignorant blockhead
would remark such a simple
mistake as this.

cleared of their humours ; these humours are to flow towards, and are to be selected, and separated, and poured out, by the exhalents of the bowels, and then discharged by severe and continued purging. Yet till this moment there is no one decided proof that such humours exist.

BUT it is indisputable, that purging day by day, as has been the practice, or even keeping the bowels gently open, as it is termed, must impoverish and debilitate the most vigorous and healthful body. What else can be the effect of constant disease and commotion in the stomach and bowels? of the food being carried from the stomach through the intestines without digestion, or the due preparation of chyle? This constant purging or opening of bowels must soon destroy the powers, not only of digestion, but also of absorption: the whole body must suffer poverty of fluids and debility of solids; universal disease must soon prevail. This must be the fate of the most healthful body. But what

of that body already diseased, loaded with prædisposition, and over this the effects of certain deranging and debilitating powers? its actions languid, and its functions imperfect; no general phenomena of health, but many of disease—is this a body to suffer evacuations?

RANSACK the whole records of medicine, and say if there be a rational pretext to support this practice. But not to be too decided: Will purging render the scrophulous body more susceptible of the action of all stimuli, whether general or specific? will it tend to the production of new actions, as it were, and cause the absorption of diseased and indurated parts? On this point the matter hinges; and if there be *the least* thing in it, it is the only principle to support the practice.

SPEAKING of the hospital sore, the ingenious Mr John Bell says, “The hospital sore is a general disease in which your whole at-

tention is to be directed to the state of the system, and that is such as will not be easily set to rights. But there is one general fact which is very interesting: we cannot but observe how much and how suddenly the powers of the living system rise after being depressed; we cannot but remark how after a short fever the system acts with uncommon vigour, how every disease disappears before the fever, and how the patient thrives after it is gone. We also see plainly the most wonderful effects, from that tumult of the system which is produced by hyosciamus, belladonna, digitalis, cicuta, mercury, and other violent drugs. Even a violent vomit excites the absorbents, and sets the whole system to work. Surely it must be from plunging the system into a sudden state of debility that it regains its elasticity (if I may express it so), or recovers its susceptibility with regard to the ordinary powers of life: I know of no other way by which we can account for the singularly good effect of evacuations in many diseases. It is on this ground that in the be-

ginning of all fevers I still approve the old practice of vomits, purges, and abstinence, by which I often see the system recovered from its oppression, and restored to that freedom of action, and that aptitude for stimuli, upon which much of the cure depends, and by which the system is prepared, as it were, for the action of those powers, as opium, bark, wine, and mild, but nourishing diet, upon which we are to trust to for accomplishing the cure. I think that in this hospital ulcer I have seen such practice useful; but I am so undecided with regard to the true practice in this disease, that I speak with diffidence; and would have you, if you do venture into this difficult path, proceed with so much caution, that you may, as it were, feel your own way; if you use evacuations, or a strict diet, it is but for a time, and in the expectation of renewing your stimuli gradually, and giving them a greater power over the system. I have always regarded the fear of evacuations as a vulgar apprehension; I am persuaded, that moderate evacuations have

no effect in producing debility; that evacuations, by freeing the primæ viæ, or the circulating system from an unmanageable burden, often revive the strength; that healthy solids will soon form new fluids; and if the solids be in a high and healthful state of activity, it signifies little, comparatively speaking, whether there be one particle of food in the primæ viæ, or one drop of blood in the arteries more than is barely necessary to preserve them in action*.”

ALL this is true, comparatively speaking,

* Vide the Principles of Surgery, in two vols. Vol. I. Of the Ordinary Duties of the Surgeon, containing the Principles of Surgery, as they relate to Wounds, Ulcers and Fistulas; Aneurisms, and Wounded Arteries, Fractures of the Limbs, and the Duties of the Military and Hospital Surgeon, p. 118, 119.

Vol. II. A System of Surgical Operations, containing the Principles of Surgery, as they relate to Surgical Diseases and Operations; as Lithotomy, Trepan, Hernia, Hydrocele, Amputation, &c.—by John Bell Surgeon.

that “healthy solids will soon form new fluids;” that “the powers of the living system suddenly rise after being” comparatively “depressed;” that “after a short fever the system acts with uncommon vigour, every disease disappears before it, and the patient thrives after it is gone;” and that by “vomits, purges, and abstinence, the system” is often “recovered from its oppression, and restored to that freedom of action, and that aptitude for stimuli, upon which much of the cure depends.” All this is true, and well observed with regard to healthy solids, “solids in a high and healthful state of activity:” and for the first time perhaps we have here the true principle held forth, “by which we can account for the singularly good effect of evacuations in many diseases: surely it must be from plunging the system into a sudden state of debility that it regains its elasticity” (so to speak), “or recovers its susceptibility, with regard to the ordinary powers of life.” But these are healthy solids, though debilitated; they have an “aptitude

for stimuli ;” and suddenly plunging them into a higher state of debility only increases that aptitude. Where there are such solids, “ it signifies little, comparatively speaking, whether there be one particle of food in the primæ viæ, or one drop of blood in the arteries, more than is barely necessary to preserve them in action.” They have a high susceptibility with regard to the ordinary powers which support life, and to every stimulus: It is only necessary to renew these powers and these stimuli gradually, thus to invigorate the solids and replenish the fluids, to carry the system to the highest and most perfect state of vigour and health.

THIS is not hypothetical reasoning, it is matter of fact, and exemplified by daily observation. We see the system bled, blistered, and purged, vomited and sweated ; all the engines of medicine played off against it ; the strictest abstinence enjoined till it is reduced to the lowest ebb of life, and displays the truly feeble pulse, and the ghastly counte-

nance. This fearful display is obvious to every one; alarm takes place, and danger is apprehended: it is now high time to relinquish the dogmas of art; a friendly hand administers a little fluid nourishment and some gentle cordial; the patient revives, his vitality is increased, the solids become more and more vigorous, and the fluids are replenished; till at length, by a gradual increase of the ordinary powers which support life, the healthful state is restored.

It is restored, because it is a sound constitution, and tenacious of life; it has no organic affections nor no chronic local disease; it is not aged nor worn out by the long continued use of powerful stimuli. Moreover, it has no predisposition or hereditary disease. The exciting causes that had operated had produced no great degree of derangement nor disorder of the functions; the evacuating plan of cure had brought the chief and only danger. But this constitution is not easily destroyed; it retains its "aptitude for stimuli," compara-

tively speaking, to the very last, and drinks up nourishment, as it were, on its first application. This constitution is freely purged and impoverished without much danger. Nay, perhaps, by plunging it suddenly into a state of greater debility, it may “recover its susceptibility with regard to the ordinary powers of life.”

BUT the scrophulous body is of another description. It is mal-conformed or predisposed; its actions are displayed in a manner languid and morbid; it has no proper aptitude for the ordinary powers of life or other stimuli, because of the predisposition. But this inaptitude is increased by the action of certain external causes, and by the derangement of certain diseases. After these have operated, the scrophulous body is not only predisposed, but, strictly speaking, diseased. Disease is superinduced to predisposition, while the predisposition gives the disease its form and shape. What then is the state of this body? It is a complicated state of body,

and a state that cannot be easily repaired. The predisposition lies at the bottom of the mischief, and retards its progress to health. It is not easily brought back to the simple state of predisposition, because, at best, it has a certain inaptitude both to the action of the ordinary powers and to all stimuli. It has weak, imperfect, or deficient powers of recovery or restoration. Let the same causes operate on a sound body, on a body without predisposition; let them operate with a greater degree of force—that body might scarcely become diseased, or if diseased, it might soon and readily be restored to health. But with the predisposed and scrophulous body the case is greatly different; it has no such aptitude or relation to the powers which support life and produce health, or, in other words, it has weak and imperfect powers of recovery from the morbid state.

THIS is surely not a body to bear even sudden, far less continued evacuations. See it in the more early periods of life, with con-

stant disease in the stomach and bowels, severe and continued diarrhœa; see it meagre and emaciated, with the delicate skin, the soft and flaccid flesh, and you may suppose the depraved and impoverished fluids; see the fallow countenance and the pitiful and languid eye; see the large head and prominent fore-head, the chop in the upper lip, the swelled glands, and the tumid belly; see the approach of rickets, tabes, and consumption of the lungs. Nor is this all, consider the predisposition at every period of life; observe “the scrophulous habit seems to consist in laxness and debility, in an imperfect action of the arteries, in an imperfect secretion of the solids, and especially in an imperfect secretion of the bony matter* :” consider the nature and degree of force in the action of the exciting causes, and the time they have continued to operate; consider how far the system is meagre, worn out, and emaciated; consider how far its actions are languid and

* Vide Principles of Surgery, vol. i. p. 567.

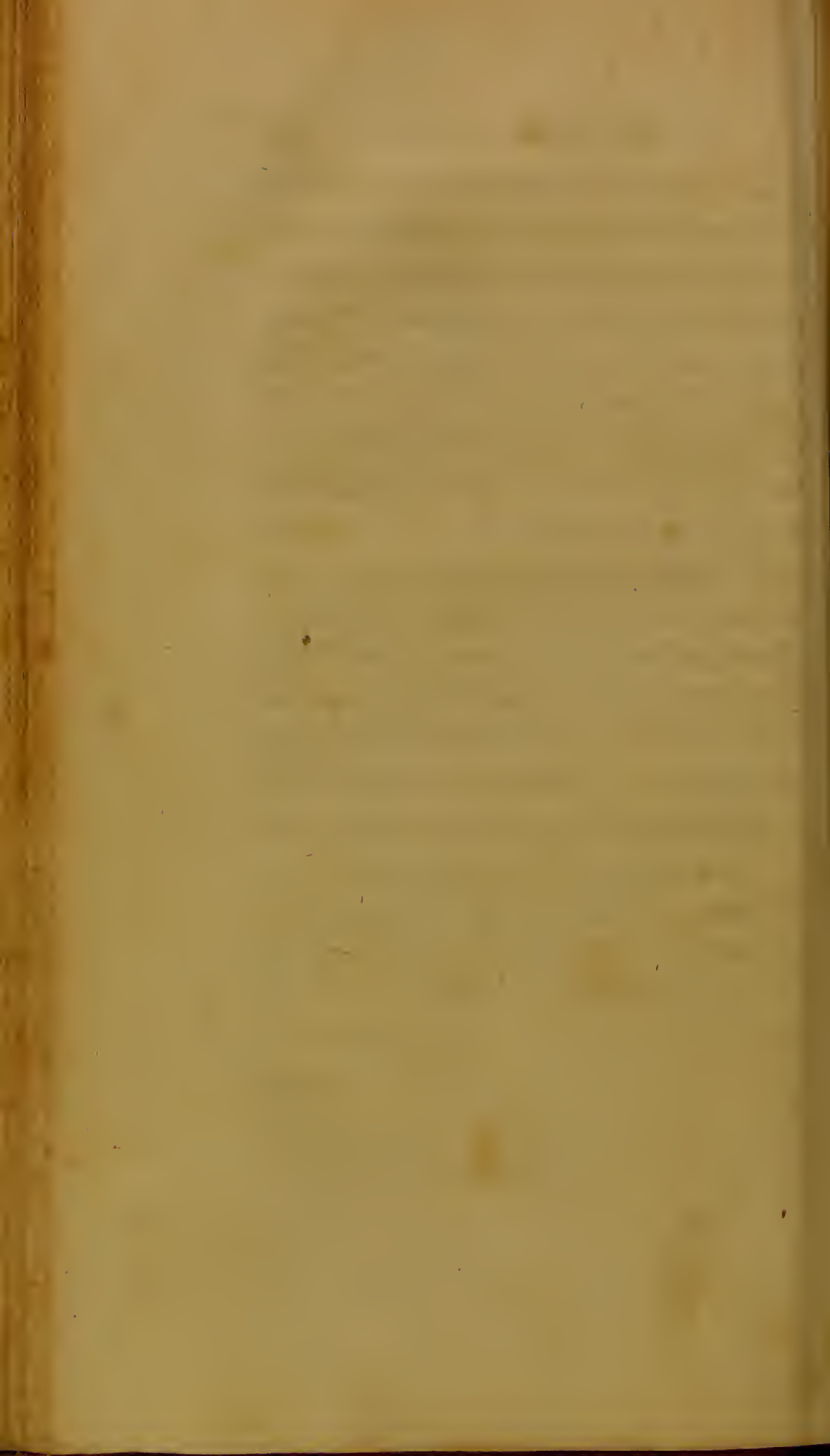
morbid; consider the condition of each particular function, and particularly that of the stomach and bowels, and see how far the food is assimilated and the blood supplied with chyle. Observe and consider all these things, and then judge how far you may employ evacuations and abstinence; how far you may plunge this system in general, and the stomach and bowels in particular, into a state of greater debility, that it may get increased susceptibility to the ordinary powers of life, and a greater aptitude for all stimuli; yet in the midst of all your induction, of all your thinking and judging, have due respect to this most judicious caveat, “if you do venture into this difficult path, proceed with so much caution, that you may, as it were, feel your own way. If you use evacuations or a strict diet, it is but for a time, and in the expectation of renewing your stimuli gradually, and giving them a greater power over the system.”

THIS is the great cause of scrophulous af-

fections in the more early periods, and in some measure through every period of life. The child is continually purged by unnatural and improper aliment. Hence arises all the evils, all the mischiefs, and all the dangers that can originate in a scrophulous, impoverished, and deranged habit of body. If purging, then, is a cause of scrophulous affections, can purging remove them? It is rash and ~~empirical~~ practice, and supported by no principle, by no knowledge hitherto obtained of the nature of the disease. Yet it is decided and active practice; it can derange the most healthful body, and how much more a body predisposed and diseased? Nor let any one argue experience in its defence; or let it be asked how often purging has really cured the disease; or how much more frequently the phenomena of scrophula have disappeared in the economy of nature, as the growth and vigour of the body became increased; as purging and other impoverishing methods were found inadequate to the effect, and the patient allowed to employ the ordinary powers of life,

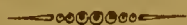
according to his own desires. How came the fame of nostrums, amulets, and innumerable quackish empirical and inert substances in the cure of scrophula? Surely these had no effect; yet during their use, the phenomena of the disease often disappeared; and surely they disappeared in the economy of nature as the body advanced in growth, and increased in vigour, as all its actions and all its functions were more vigorously and more perfectly performed. Were there not another fact than this single one, that as the growth and vigour of the body increases, scrophulous ulcers heal, and scrophulous joints anchylose, it is enough to condemn the use of evacuations, and every other the least debilitating or deranging power, and to establish an opposite method of cure; a method of cure to produce the most perfect state of vigour of which the scrophulous body is susceptible. This is the method of cure which Nature herself points out; and therefore it must also be right to assist her in her operations, and extremely wrong to disturb or oppose them.

Thus far we are led, as it were, by the faithful and unerring hand of Nature; we are let in some measure into her secret; for we see that as her operations are perfected as the growth and vigour of the body increase, the disease is removed. We are therefore led to conclude that it must depend upon debility or languid and morbid action. This conclusion is supported by the phenomena of the predisposed and scrophulous body; it is further supported and greatly strengthened by the nature and effects of the exciting causes of scrophula, and by the phenomena which follow their operation; it is also in some degree supported by experience: for instances could be adduced in which the actual phenomena of the disease have been shortened in their duration, and removed by an invigorating plan of cure, conjoined with certain artificial and specific stimuli.



DISSERTATION II.

AN EXAMINATION OF THE GROUNDS ON
WHICH WHITE SWELLING OF THE JOINTS
HAS BEEN DIVIDED INTO A SCROPHU-
LOUS AND A RHEUMATIC SPECIES.



THUS far have we proceeded in our subject. And while we have been describing the nature and cure of scrophula, we have been actually describing the nature and cure of white swelling of the joints: For this is a scrophulous disease; it has every thing characteristic of scrophula; it takes place in the children of scrophulous parents; it takes place about that period of life in which scrophulous affections most frequently appear; it takes place without any obvious exciting cause, or the causes which have been assigned do not seem

adequate to the effect ; and of all diseases, its cure is perhaps the most difficult. The subjects therefore of this disease are predisposed : for although the evidences of scrophula may not be always obvious in the parent or parents ; yet as there is no due relation or necessary connection between the disease and exciting causes, it follows, that it must be connected more or less with predisposition. But in whatever degree it may be connected, either with predisposition or exciting causes, it is to all intents and purposes a scrophulous disease.

MR BENJAMIN BELL, however, has found out a rheumatic species of this disease ; and therefore it behoved him to divide it into a scrophulous and a rheumatic species *. Thus

* Vide a Treatise on the Theory and Management of Ulcers, with a Dissertation on White Swellings of the Joints ; to which is prefixed, An Essay on the Chirurgical Treatment of Inflammation, and its Consequences, by Benjamin Bell.

has he made a discovery which no one writer before himself has been ingenious or fortunate enough to make : For “ though there are, by different writers, several detached observations upon this complaint ; yet no regular account has ever been given of it, farther than what may be met with in general dissertations on diseases of the bones ; they, viz. the bones, having always been considered as the principal seat of such disorders*.”

It would therefore seem that these writers had never seen this disease without an affection of the bones, or else they surely would have distinguished it. But perhaps they have not carried their “ researches with respect to it as far as possible † ;” or “ it is in

* Vide the Treatise, p. 395, 396.

† “ There are not, probably, many disorders to which the human body is liable, which prove either of worse consequences to patients, or that are less understood by practitioners, than White Swellings of the joints: inasmuch that, whenever the disease is thoroughly formed, it is in general considered as incurable.”

this, however, as in many other diseases, that the complaint has frequently been of considerable standing before practitioners are called in * ;” or they have not had “ many opportu-

“ This ought certainly to be a very strong inducement, with every practitioner, for carrying his researches with respect to it as far as possible, and will, it is hoped, be a sufficient apology for these observations being now offered : for, so long as we remain, with regard to any circumstance, in uncertainty, pointing out defects merely, though no material improvements should be proposed, may frequently, by exciting others to a farther prosecution of the inquiry, be a means, at last, of the subject being more accurately understood. And if that effect should, in any degree, be the result of the following remarks, I shall always consider the time bestowed on them as having been usefully employed.” Vide the Treatise, p. 394.

* “ It is in this, however, as in many other diseases, that the complaint has frequently been of considerable standing before practitioners are called in : So that although, if seen from the beginning, and through all its different stages, it might generally be easy enough known of what particular nature the disorder in reality is ; yet, by being so much advanced as they frequently are, before

nities of seeing every species of the disorder in all its several stages*;" or perhaps the "disorder" has been changing its nature since "these writers" wrote, or since these "prac-

assistance is desired, and the exact history of the symptoms being seldom to be obtained from patients themselves, it is often impossible, in the latter stages of the disease, to make any accurate or certain distinction; the symptoms of both species being then commonly exceedingly similar." Vide the Treatise, p. 396, 397.

* "When that is not the case, however, and the practitioner is called in before the symptoms have made any great progress, he may always, with a little attention, acquire almost a certainty with respect to the nature of the complaint. And, as I have had many opportunities of seeing every species of the disorder, in all its several stages, I propose, first, To give as exact an account as possible, of the rise and progress of the different symptoms in each species; then to mention the several appearances of the joints, which in each are observed on dissection, with the most common exciting and predisposing causes of the disorder; and, lastly, I shall enumerate the different remedies that I have known used for it, with their several effects." Vide the Treatise, p. 397.

tioners were called in:" For now "there seem evidently to be two different species of white swellings, entirely distinct from one another; and as the one is of a much more mild nature than the other, very frequently admitting of palliation, and sometimes even of complete cures, which the other never does, it would seem to be a matter of importance, so to characterise the different varieties, that the one may be easily and certainly distinguished from the other.*" Most undoubtedly if such "varieties" exist: But we suspect their existence. We suspect that this discovery of our author is "pointing out defects merely;" while "no material improvements" are "proposed." Yet it his own discovery; for it (*viz.* this discovery) has elucidated the "researches" of all the "different writers," and all the different "practitioners" in the old time before him; "they, *viz.* the bones, having always been considered as the principal seat of such disorders." Some of

* Vide the Treatise, p. 396.

these writers, indeed, and some of these practitioners, have talked about the disease being seated in the involucra of the joint; but they never dreamed that white swelling of the joints had the least affinity or similitude to rheumatism, or any rheumatic affection. Neither do we find that any succeeding writer has laid claim to it; for we can declare, on good and recent authority, that “this is plainly a disease, and a slow disease of the bones; it is a disease of boys, because in them the bones are but forming; it is a disease of scrophulous boys, because in that state of the system ossification is a slow and imperfect process; it is a disease peculiar to the bones of the great joints, because they are large, and are till the twentieth year very imperfectly formed*.” This author, to be sure, is speaking of the scrophulous disease of boys, or the disease of the bones which compose the hip joint; while the rheumatic species was discover-

* Vide Principles of Surgery, Vol. I. p. 567.

ed in the knee joint. But let it be remembered, that “swellings of this nature, it may be remarked, occur in every joint of the body; but much more frequently in the large; than in the small joints: Thus there are probably twice the number to be met with in the knee and ankle joints, than are ever found in all the rest of the body besides*.”

WHITE swelling is a scrophulous disease in the hip joint; it is a scrophulous disease “in the knee and ankle joints;” it is a scrophulous disease “in every joint of the body;” it is a pure and unmixed disease; it partakes neither of the nature of rheumatism, nor of any other disease: for although it may be excited by causes which excite other diseases, and by the derangement which other diseases produce; although it may be sometimes of a “mild nature, frequently admitting of palliation, and sometimes even of complete cures;” yet still it is white swelling,

* Vide the Treatise, p. 398.

still a scrophulous disease ; there is not a particle of rheumatism in its whole composition. It is a matter of importance to inquire into this subject ; to inquire into the grounds on which white swelling has been divided into a scrophulous and a rheumatic species ; because it has a manifest reference to the method of cure.

AND these grounds are, “ first, the rise and progress of the different symptoms in each species ; then the several appearances of the joints which in each are observed on dissection, with the most common exciting and predisposing causes of the disorder.” Here the plan is fairly laid out ; and it may seem to promise some variety in the disease : Yet it is in appearance merely ; or at least it will do any thing but establish a “ rheumatic species of white swelling.”

FIRST, we are promised “ as exact an account as possible of the rise and progress of the symptoms in each species.” And this account

is so exact, or rather the symptoms in each species so exactly agree, that they would almost defy the power of criticism to find out the difference. "The first, or rheumatic species, and what may be considered as the most simple species of the disease, begins with an acute pain, which seems to be diffused over the whole joint, and frequently even extends along the tendinous aponeurotic expansions of such muscles as communicate with the joint. There is, from the beginning, an uniform swelling of the whole surrounding teguments, which in different patients is in very different degrees, but it is always so considerable as to occasion an evident difference in point of size between the diseased and sound joint of the opposite side: ~~There is~~ generally great tension prevails; but seldom, in this period of the disorder, any external discolouration.

"THE patient, from the first commencement of the disease, receives the greatest pain from motion of the joint; and always finding it easiest in a relaxed posture, it is

accordingly kept constantly bent; which generally, in every situation, but more especially in the knee, begets a stiffness or kind of rigidity in the flexor tendons which correspond with it*.”

ON the other hand, “in the more inveterate or scrophulous species of the disease, the pain is commonly very violent; more acute, generally, than in the other; and, instead of being diffused, is more confined to a particular spot, most frequently to the very middle of the joint: In some instances, I have known the patients say they could cover the whole pained part with the size of a crown-piece or less.

“THE swelling is at first very inconsiderable; in so much that, on some occasions, even when the pain has been very violent, very little difference, in point of size, could

* Vide the Treatise, p. 398, 399.

be observed between the diseased and sound joint of the opposite side.

“IN this, as in the other species of the disease, the least degree of motion always gives very great pain; so that the joint being here too constantly kept in a bent position; that stiffness and rigidity of the tendons come likewise soon to be produced*.”

WHAT, then, is the difference between the two species of the disease, so far as relates to pain, swelling, tension, discolouration, and stiffness and rigidity of tendons? The “rheumatic species begins with an acute pain;” but it is a “diffused pain,” there is “an uniform swelling of the whole surrounding teguments;” but “in different patients” it “is in very different degrees:” yet “generally great tension prevails,” though there is “seldom, in this period of the disorder, any external discolouration:” but there is “the greatest

* Vide the Treatise, p. 406, 407.

pain from motion of the joint," and there is "a stiffness, or kind of rigidity, in the flexor tendons." So, also, the "scrophulous species begins with acute pain;" but it "is commonly very violent, more acute generally than in the other:" yet it is not uniformly, it is only "commonly" or "generally" so; "and instead of being diffused, is more confined to a particular spot, most frequently to the very middle of the joint;" *i. e.* not always so circumscribed; and it is only "in some instances the patients say they could cover the whole pained part with the size of a crown-piece or less." Here "the swelling is at first commonly very inconsiderable;" so also it sometimes is at first in the other species of the disease: for "in different patients" it "is in very different degrees;" yet in both species "the least degree of motion always gives very great pain:" and in both species there is a "stiffness or kind of rigidity in the flexor tendons."

Thus far the symptoms of both species

seem to agree, according to our author's own "exact account" of them. And to do him justice, he does not pretend to say, that "in this period of the disorder" there is pain, swelling, tension, discolouration, and stiffness and rigidity of tendons in the one species, and none of these symptoms in the other. He has forgot the tension and colour in the "inveterate species;" but we have the pain, swelling, and stiffness of tendons, and we perceive no *distinctive* difference in the form, degree, and progress, of these symptoms in either species. For ought we learn to the contrary, the swelling advances gradually in both species, and in both there is some degree of pain in moving the joint, and the same stiffness and rigidity of the tendons. There is, indeed, something puzzling about the pain in the scrophulous species; for it is said to be "commonly very violent, more acute generally than in the other, and more confined to a particular spot." Nevertheless, "in some cases, the pain, even in this species of complaint", (the mild or rheumatic species)

“is from the beginning so violent, that practitioners are led at once to conclude it to be of the worst and most incurable kind : And patients, rather than suffer a long continuance of such a torment as it is often attended with, and after all remain in uncertainty with respect to a cure being obtained, frequently prefer immediate amputation of the member *.”

BUT with such patients who do not make this preference, who would rather suffer, or prefer any thing than suffer, or prefer to be dismembered ; or who have not been told of the “uncertainty with respect to a cure being obtained ;” or who have not the pain so very excruciating as to determine the necessity of amputation ; or who are not so far reduced by the pain that an immediate amputation is necessary to save life—with such patients, “if the disorder, either by nature or by the effects of proper remedies, is not now carried off, the swelling, which originally

* Vide the Treatise, p. 403.

was not very considerable, begins gradually to augment, and goes on till it sometimes acquires two or even three times the natural size of the part.

“THE cuticular veins become turgid and varicose, the limb below the swelling decays considerably in its fleshy muscular substance, at the same time that it frequently acquires an equality in point of thickness, by becoming œdematous; the pain turns more intolerable, especially when the patient is warm in bed or otherwise heated; and abscesses form in different parts of the swelling, and run in all different directions, at the same time that there frequently appears to be no immediate communication between the matters contained in them.

“IN all these abscesses, a fluctuation of a fluid, upon pressure, is generally evident, as is the case in every collection of matter not very deep seated; but, independent of that fluctuating sensation, all such swellings afford

a very peculiar elastic feel, yielding to pressure; at the same time that they do not, like œdematous swellings, retain the mark, but instantly fill up any depressions that by the finger or otherwise happen to be made in them.

“THESE different collections, either upon breaking of themselves, or on being laid open, discharge considerable quantities of matter, which, at first, is generally purulent, and of a pretty good consistence: it soon, however, degenerates into a thin, fetid, ill-digested sanies; and has never, at least in proportion to the quantity discharged, any remarkable influence in reducing the size of the swellings, which still retain nearly their former dimensions.

“IF the orifices from whence such matters flow are not by art kept open, they very soon heal up; and new collections forming in different parts, again break out and heal as before: So that, in long continued disorders of this kind, the whole surrounding te-

guments are often entirely covered with cicatrices, that remain after such ulcers.

“ LONG before the disorder has arrived at this state, the patient's health has generally suffered considerably; first, from the violence of the pain, which is often to such a degree, as to take away entirely both sleep and appetite; and then, from the absorption of matter into the system, which always certainly takes place in some degree from its first formation in the different abscesses; but which, indeed, never appears so evidently, till the several collections either burst of themselves, or are by incision laid open; when a quick pulse, night sweats, and a weakening diarrhoea, are always sure to occur; and which generally, at last, carry off the patient, if the member is not either amputated, or if a cure of the disorder is not in one way or another effected*.”

* Vide the Treatise, p. 400, 401, 402.

“THESE are the several symptoms of this species of white swelling, in all its different stages. - We shall now, as was proposed, give a description of the other species of the disorder” in its more advanced state.

“As the disorder advances, the pain turns more violent, and the swelling becomes more considerable, with an evident enlargement of the ends of such bones as compose the joints.

“IN process of time, the tumour gets that elastic feel formerly taken notice of, varicose veins appear over its surface, and collections of matter occur in different parts of it: These, upon bursting or being laid open, discharge considerable quantities, sometimes of a purulent-like matter, but most frequently of a thin fetid stuff; and if a probe be introduced, and can be passed to the bottom of the fores, the bones are found carious, and pieces of them are often discharged at the openings.

“On the farther continuance of the disorder, the constitution comes here likewise to suffer as in the first species of the disease; and a diarrhœa with night sweats commencing, the patient is soon reduced, from perhaps the fullest habit, to little more than skin and bone*.”

Now we have before us “the rise and progress of the different symptoms in each species” of white swelling. It is wonderful how near their “rise” is to each other—they “rise” all about the joint of the knee. The uniformity of their progress is no less remarkable; they advance in progressive motion, and if any one of them should seem to step aside, it is but for a moment; they all join issue at last, and end in the same tragical scene. The mild species “generally at last *carry* off the patient,” and the inveterate kind only reduce him to little more than “skin and bone.” Here they seem to differ a little; but it is in shadow only, not in sub-

* Vide the Treatise, p. 407, 408.

stance. In short, we cannot perceive that they differ in any one thing, except in the “inveterate species, if a probe be introduced, and can be passed to the bottom of the sores, the bones are found carious, and pieces of them are often discharged at the openings.” Query, Do these things never happen in the mild species?

THIS kind of evidence, therefore, goes for nothing; for twist it in any form or in any shape you will, it will not establish two species of white swelling. The pain in no two cases is, perhaps, exactly similar. It is sometimes the very first symptom, and sometimes it is only secondary; it sometimes take place previous to the other symptoms, and with them gradually increases; and sometimes the other symptoms are considerably advanced before the pain takes place in any considerable degree. Nay, the pain, even in the rheumatic species, according to our author, “is from the beginning so violent, that practitioners are led at once to conclude it to be of the worst

and most incurable kind, and patients frequently prefer immediate amputation of the member." What then are we to make of the pain? Yet it is the chief symptom on which the distinction is formed; for the same observations apply to the other symptoms. The swelling sometimes precedes the pain and sometimes comes after it, and "in different patients it is in very different degrees." And it is notable how "in process of time the tumour in each species gets the same elastic feel, the same varicose veins, the same collections of matter," and the same every thing; and ends either in the "amputation of the member," or the death of the patient; for this author seems to have little or no faith in anchylosis.

HAVING thus had so little information concerning the different species of white swelling from the "account" of the symptoms, "we shall now, as was proposed, enumerate the appearances that in general are observed

Truly this loose way of stating an opinion will never do. The man should have learned that if there proved to not agree a doctor upon some question, — nothing more necessary than the name of

on dissecting such swelled joints after amputation of the member." And first with regard to the rheumatic species.

"SEVERAL such instances I have seen, where the operation has been performed in very early periods of the complaints. In all of these, the only preternatural affection observed on laying open the swellings, was, a considerable morbid thickness of the surrounding ligaments, without any disease of the joint whatever; the bones and cartilages always remaining perfectly sound, as likewise the synovia, both with respect to quantity and consistence.

"THIS thickening of the ligaments, though in general it appears in a greater or lesser degree, according as the complaint has been of long or short standing, yet it is not always the case; for, in some recent instances, the ligaments have appeared more diseased than in others where the disorder had con-

tinued longer : In the former, indeed, the symptoms were always found to have been very violent.

“ IN the more advanced stages of the disorder, when abscesses have formed in different parts, when the pain has been long very violent with great addition of swelling ; on laying open the parts, the thickening of the ligaments is then found more considerable, and is generally, if not always, attended with an effusion, into the surrounding cellular substance, of a thick glairy kind of matter, which appears to be the cause of that springy feel peculiar to such swellings, as was formerly taken notice of in the description.

“ THE different abscesses or collections of matter are found to run in various directions through this glairy albuminous kind of stuff, without, however, seeming to mix with it. In some few instances, again, together with collections of pus, a great many small hydatides are observed ; and in the farther progress of

the disorder, all these together form such a confused mass of different matters and substances, that it is almost impossible, by dissection, to trace them farther than is at once observed on their first being laid open.

“EVEN all these appearances I have known occur, without any affection of the bones of the joint; both they and the surrounding cartilages, upon cutting through the capsular ligaments, remaining perfectly sound.

“WHEN, however, by a very long continuance of the complaint, these ligaments come to be corroded by the different collections of matter, the cartilages then, and in consequence the bones, are very soon brought to suffer; the latter becoming carious, so soon as the former, by the acrimony of the matter, have been abraded.

“THE tendons of the flexor muscles, which are always in this disease, as was already mentioned, very stiff and much contracted,

do not, upon dissection, afford any evident morbid appearances, either with respect to hardness or enlargement *."

SECONDLY with regard to the scrophulous species, " Upon such joints being dissected, either after death, or after amputation of the member in the first stages of the disorder, the soft parts seem very little affected: but in all, even the slightest that I had ever an opportunity of seeing, there was constantly observed, an enlargement either of the whole ends of the bones, or of their epiphyses; frequently of those on one side of the joint only; in others, again, the bones on both sides have been affected.

" THIS enlargement sometimes occurs, without any other evident disease: but in general, and always in a more advanced state of the complaint, the soft spongy parts of such bones appear dissolved into a thin, fluid,

* Vide the Treatise, p. 403—6.

fetid matter; and that too, in some cases, without the cartilages which surround them seeming much affected. In process of time, however, the cartilages come likewise to be dissolved; and then the different matters, *viz.* that of the bones and softer parts, all mixing together, such swellings being in that state laid open, exhibit a still more confused collection than is generally observed even in the worst stages of the other species of the disorder."

"ALTHOUGH it was remarked, that, in the early periods of the complaint, the surrounding soft parts do not always appear much affected; yet, in its farther progress, they likewise are always brought to suffer. The ligaments become thickened, and the contiguous cellular membrane stuffed with that viscid glairy kind of matter, as observed in the other species of the disorder*."

* Vide the Treatise, p. 408, 9.

IN reviewing these dissections, we observe the progress of each species of the disease from its commencement to its final termination; we observe that our author must "have had many opportunities of seeing and dissecting every species of the disorder in all its several stages" in life and in death, and "after the amputation of the member;" we observe also an astonishing difference in the morbid "appearances in the early periods of the complaints," and an equally astonishing coincidence in their more advanced stages. In short, the one species arises in the soft parts, or rather in the "surrounding ligaments of the joint," and the other in "the whole ends of the bones or their epiphysis;" yet in either species all the parts, whether hard or soft, whether ligaments, bones, or cartilages, "are always brought to suffer."

Thus, in the scrophulous species, bones, cartilages, and soft parts, are all "dissolved into a thin fluid fetid matter" and mixed and blended together. It is likely that the

collection will be "more confused" in this than in the other species; for this species has the seeds of dissolution, as it were, in its very nature and essence. "The whole ends of the bones, or their epiphyses," are first enlarged, and then their "soft spongy parts" are dissolved; then "the cartilages come to be dissolved;" then the softer parts must also be dissolved—for bones, cartilages, and softer parts, are all mixed together. But how this general waste or dissolution comes about we know not; for we hear of no menstruum, nor no dissolving power. These parts must therefore dissolve themselves by an inherent power of dissolution—it must be in their very nature to dissolve. But in the rheumatic species of the disease the case is somewhat different. The ligaments, cartilages, and bones, are acted upon and corroded by an acrimonious matter. First, the "ligaments come to be corroded; then the cartilages;" and then, "in consequence" of the abrasion of the cartilages, "the bones are brought to suffer." There

is a general devastation—the principal apparatus of the joint is “corroded by the acrimony of the matter.”

THIS is a most wonderful acrimony—Yet it is not the original cause of all the mischief; for “where the operation has been performed in very early periods of the complaints, the only preternatural affection observed, on laying open the swellings, was a considerable morbid thickness of the surrounding ligaments.” Swellings therefore, are no preternatural affection; and therefore the only preternatural affection observed must have been in the “surrounding ligaments.” If this mode of reasoning is not to be admitted, we shall be puzzled to know any thing about the matter—We shall neither know how or where the disease began, nor how or in what manner it ended. But having proved that swellings are no preternatural affection, the burden at once falls all upon the “surrounding ligaments.”

HERE the disease begins “without any disease of the joint whatever, the bones and cartilages always remaining perfectly sound, as likewise the synovia, both with respect to *quantity and consistence*.” The bones and cartilages are not yet “corroded by the acrimony of the matter.” But this healthful *quantity and consistence* of the synovia is somewhat remarkable after the morbid thickness of the “surrounding ligaments.” The capsular ligament is partly concerned in secreting the synovia: yet it would seem, that notwithstanding its morbid thickness, it had continued to perform its healthful function; and it would also seem, that all the other lubricating apparatus of the joint had been equally sound and healthful. There had been no disease but in the “surrounding ligaments.”

AND how came these ligaments to be diseased? This is a necessary question; for as yet no matter is formed to corrode them. They stand, therefore, on the same footing

with the bones and cartilages in the other species of the disease—they have the seeds of disease as it were inherent in their constitution. This it is that gives them a “morbid thickness”—a disposition to increase in thickness—a disposition to form “abscesses or collections of matter,” to form “a thick glairy kind of matter, or albuminous kind of stuff,”—to form hydatides—to form a “mass”—“a confused mass of different matters and substances,” that the first dissector in the world could not “trace them farther than is at once observed on their first being laid open.”

THE whole mischief, therefore, according to this author, arises out of the “surrounding ligaments:” they first thicken, then form matter; this matter works its way outwards, and corrodes, and forms lodging-places for itself in the cellular substance.—Then it begins its work inwardly: it first corrodes the very ligaments which gave it birth—then, in regular order, it corrodes the cartilages—then, “in consequence, the bones are very

soon brought to suffer." Now, let any one tell whether the disease is scrophulous or rheumatic.

WE cannot doubt the accuracy of our author's observation, that he first laid open swellings, and then found a thickening of the "surrounding ligaments." These "appearances" are founded in the nature of white swelling. It is also in the nature of this disease that abscesses are formed, cartilages destroyed, and ligaments and bones ulcerated. But that these effects are produced by the acrimony or corrosion of the matter is quite another question.

BEFORE our author had ventured this theory, he should have reflected a moment, and considered about the cause of this "morbid thickness of the surrounding ligaments." It might have occurred to him, that the same cause which produced disease in these ligaments, might also produce disease in other

parts of the joint ; and therefore every other part concerned in the structure and formation of the joint might also become diseased—the tendinous expansion of the muscles, the *burfæ mucosæ*, the fascia, the common cellular substance ; for they are all concerned in one great purpose, the formation and œconomy of the joint.

If then the disease begin in the ligaments, it is this disease which gives occasion to the formation of matter. The same disease may take place in the bones, and cartilages, and other parts of the joint : they, in their turn, will also form matter ; but this matter is an effect, and not a cause, of the morbid condition of the joint ; for were it a cause, how comes the first “ morbid thickness of the surrounding ligaments ? ”

THE cause of this morbid condition of the ligaments is the true and primary cause of the disease. It is a constitutional cause ; and it may perhaps produce its primary effects in

one case in the ligaments, in another in the bones and cartilages, or all the parts may become diseased at one and the same time. De Haen, in his Treatise "*De Morbo Coxario*," seems to consider the disease as primarily seated, not only in the bones and cartilages, but also in all the soft parts in or about the joint. It is dissection alone that can throw light on this subject; yet some perhaps may be of opinion that dissections are still wanting to ascertain the real state of parts in the earlier periods of white swelling.

"THE swellings affecting the joints in this disease," says Wiseman, "are of two sorts; both of them are made by congestion, and increase gradually; yet differ, in that the one ariseth externally upon the tendons, and between them and the skin; the other internally within the bone itself.

"THAT which ariseth externally affecteth the ligaments and tendons first; and sometimes relaxeth them to such a degree, that

the heads of the joints frequently separate from one another, and the member emaciates and grows uselefs. But, for the most part, the humour, over-moistening the ligaments and tendons, produces a weakness and uneasiness in the joint, raising a tumour externally; and in progress the membranes and bones are corroded by reason of the acidity of the humour; yet it is much hastened if, upon a supposition of a dislocation, they consult the bone-setters *."

SPEAKING of the same disease, Turner observes: "The *prognostic* of this tumour is ever doubtful, since there is great difficulty to disperse it, very hard to keep the same at a stand; and if an *abscess* ensues, as great danger of a caries at the bottom, rotten ligaments, fistulous ulcers, and in the conclusion a *secondary* or symptomatic consumption; at best a stiff and uselefs member †."

* Vide Wiseman's Chirurgical Treatises, p. 261.

† Vide Turner's Surgery, Vol. I. p. 156.

THUS, according to Wiseman, there “are two sorts of swellings of the joints,” of the same nature; yet, differing in this, that the one ariseth in the involucra of the joint, and the other in the bone. But, according to Turner, it would seem that there is only one kind of the disease, and that the bones are not primarily affected.

THIS is also the opinion of a more modern writer, Mr Brown Cheston: “Upon examining the knee,” says he, “either after death or amputation, we find the integuments very much thickened; and the cellular membrane, instead of that looseness and *ductility*, its natural property, and which allows the skin to roll so freely over the joint, is become a compact substance, most frequently full of a thick gelatinous humour. In old inveterate cases these external parts are in general so altered from their natural appearance, and blended and confounded together, that it is almost impossible to distinguish them from each other. The ligaments are so much thickened

and swollen, that they appear another substance; and the resistance they afford through such a diseased medium as the cellular membrane is now become, is sufficient to impose an opinion that the bone is very considerably inlaid, when it really is not so in the least."

YET this same writer also tells us, that "the bones of the joint are affected variously. In some, where the pain has been greatest, and confined to the knee alone, has so far reduced the patient, that an immediate amputation is necessary to save life. The joint has been found very little, if at all, diseased. This appears, in some respects," continues he, "like the one case of white swelling that, according to *Chefelden*, is amazing, where the pain is so great, that we are forced to take off the limb, and neither find upon dissection the ligaments or glands diseased, nor matter in the joint, nor the bones carious, or any diseased appearance, except that the heads of the bones are a little larger and softer." He further observes, that "a case exactly cir-

cumstanced with this described by *Chefelden* has never fallen under my inspection. In two patients, where the joint was very little enlarged, and where the pain was so very excruciating as to determine the necessity of amputation, I observed, though the cavity of the joint was not in the least diseased, yet the ligaments had lost their natural firmness and appearance.

“ IN other instances,” says he, “ where a purulent fluid has been discharged by any opening, whether by ulcer or incision, the bones have generally been found injured ; the cartilages that cover the extremities of the femur and tibia, as well as the femilunar cartilages, have been dissolved with mucus, and the bony fibres of the epiphysis might be seen shooting through it: The lower extremity of the femur, near where it is joined to the epiphysis, soft, red, and as it were turgid with sanious humour, which by pressure might be readily forced out. The external plate, or cortex of the bone, might

be easily separated in small bits from its internal cancelli, containing in such places a medulla inclining to a brown colour*."

"THE following is the case of a patient," by Mr Ford, "who suffered from the disease of the hip-joint, for several months labouring under the primary symptoms characteristic of this complaint, but finally destroyed by a violent fever, not apparently connected with his local complaint.

"THOMAS WELSH, a boy ten years of age, of a fair complexion, brown hair, born of healthy parents, both living at the same time, received a blow on his groin, about fourteen months before his death, from a cricket ball, thrown with considerable force. His mother, soon after he received the blow, thought:

* Vide Pathological Enquiries and Observations in Surgery, from the Dissections of Morbid Bodies, by Richard Brown Cheston, Surgeon to the Gloucester Infirmary.

that he halted a little, but his lameness was not very apparent. It was not however, till eight months after the accident happened, that it was judged necessary to have recourse to a surgeon for advice. The lameness at this period was very perceptible, and the pain in the groin and thigh, shooting backwards towards the nates, was so acute, that, although naturally a chearful child, he could not contain himself from frequent screaming.

“HE had now become uneasy, restless, and was continually getting up from his chair, particularly at his meals, which he preferred taking in an erect posture, resting on the sound leg, or frequently shifting about, to vary his mode of standing. His health, in other respects did not appear to be much affected, his appetite was good, and his sleep was not much interrupted, till a short time before his death, when he began to cough, and to shew symptoms of weakness.

“AT the time he was brought to the

Westminster General Dispensary for assistance, the pain had become more violent in the groin, and in the thigh; a very considerable degree of lameness was manifest, and the inguinal lymphatic glands were swelled: a caustic was then applied to the hip, a little behind the great trochanter; soon after this application, he grew so much better that he indulged himself in the usual pastime of boys, jumping with a rope, and standing upon his head; his cough was much abated, and the pain in his hip was entirely gone. The limb notwithstanding, still appeared to be wasted, and was certainly elongated.

“Soon after this time he was seized with a fever, attended with petechiæ, which put an end to his life in the course of a few days.” Mr Ford “obtained leave to examine the limb, and found the elongation still very evident and demonstrable in the dead body. There was in the cavity of the hip-joint a small quantity, about a tea-spoonful, of matter; the head of the thigh bone was a little inflamed, the

capsular ligament rather thickened, the ligamentum teres united in its natural way with the acetabulum : the cartilage lining the cotyloid cavity eroded in one place, with a small aperture, through which a probe might be passed, underneath the cartilage, into the internal surface of the os pubis, on one side, and on the other, into the os ischii ; the opposite or external part of the os innominatum showing more appearance of disease, than the cotyloid cavity.

“SOME time before,” continues he, “I had examined, by dissection, another disease of the hip-joint, which had not proceeded to an external suppuration ; but not having preserved the morbid parts, I cannot say, that the disease was in the subject further advanced, that the limb was beginning to shorten, and to be contracted forward, that the patient, who was a boy at school, being thrown over a form, was taken home in great pain, and died in a few days after, with fever and convulsions.

“ON examination of the joint after death, there was no appearance of inflammation, no tension, or swelling externally, but the cotyloid cavity was thoroughly carious, the cartilages eroded, and the head, and part of the neck of the thigh-bone crumbled away. *”

SEVERAL important reflections arise from the history of these cases: But Mr Ford himself has drawn the principal conclusion which we had in view—“The foregoing cases, duly considered,” says he, “suggest various reasonings, and seem to warrant the following conclusion: namely, that a morbid state of the cartilages and bones, which form the hip-joint, is the real origin, and efficient cause of the whole train of alarming symptoms, which accompany this disease, from its earliest appearance to its ultimate termination.”

* Vide Observations on the Disease of the Hip-Joint, &c. by Edward Ford, F. S. A. surgeon to the Westminster General Dispensary.

THE same conclusion is supported by the history of the 17th case in Mr Ford's "Observations ;" for "in cutting into the joint, two large spoonfuls of matter were discharged from the cotyloid cavity."

THE following case by Dr Monro also shows that the bones are primarily affected—or at least that they are affected independently of the "acrimony of the matter."

"ISOBEL BLACKADDER, a young woman of a delicate tender constitution, having hurt her left leg by a fall some years ago, an ulcer broke out near her heel, and several pieces of bone cast out at it; but it recovered so well that she went to service again.

"IN the end of 1734, having hurt the same leg by another fall, the knee swelled, became very painful and stiff; for which she was taken into the infirmary; where, after bleeding, a few dozes of *aquila alba*, and embrocation with *aq. minderereri*, the swelling and

pain both seemed to abate; but soon became as bad as formerly, and never afterwards yielded to any medicines.

“THE skin of the swelled parts was not discoloured, and on the inside of the joint a fluctuation was felt in one or two points; but the quantity of liquor appeared very small, and the fluctuation had a different feeling to what commonly *pus* collected in a cavity has. Her pains were very sharp, especially upon the least motion of the affected leg; her flesh and strength decayed daily, and the hectic symptoms increased; which at last brought her so low, that she could not be raised to a sitting posture without fainting; which brought her under the necessity of suffering the member to be amputated. Accordingly it was cut off above the knee:” and “when the diseased joint was dissected, all the cellular membranes, in which fat is naturally contained under the skin, between the muscles and tendons, and upon the ligaments, were found full of a glairy matter, which had in-

sinuated itself so much everywhere, and had made the other parts so soft, that we could scarce distinguish one from another. In several places of this glairy substance there were small cavities of *pus*. When the articulation of the knee was opened, all the mucous glands and fatty membranes were seen in the same condition with the exterior parts; the *semilunar cartilages* themselves, between the *tibia* and *femur*, being quite soft, and with the same cellular mucous appearance that the glands had. We also observed some *pus* within the cavity of the joint; but the extremities of the bones were scarce begun to be eroded.*” Thus the whole joint was diseased—“All the cellular membranes under the skin and upon the ligaments,” and within the ligaments—“all the mucous glands and fatty membranes, and the *semilunar cartilages*, were seen” diseased. Matter, therefore, could not fail to be produced both within and without the joint; and this matter is

* Medical Essays and Observations, vol. iv. art. 18.

plainly an effect, and not a cause, of the disease." Here it is not, as Mr Bell would have it, that the matter first corrodes the ligaments—then the cartilages—then "in consequence the bones are brought to suffer;" for the ligaments were not corroded: "the articulation of the knee was opened;" and on being opened, the parts within were found diseased, and pus formed within the cavity of the joint.

THUS have we seen, on the evidence of dissection, that this diseased state of the bones invariably takes place in every case of white swelling; at least, in its more advanced state, the bones have always been found diseased. Hence it might seem, perhaps, that in every instance the bones are originally and primarily affected: and there is nothing against this opinion but the dissections of Cheiton and Bell. Yet there are some stumbling-blocks in the way concerning these dissections. *First*, The corroding quality of the matter is not easily got over; and if it has

no such corroding quality, if it is not adequate to the effect of corroding ligaments, cartilages, and bones—the disease of the bones must be primary, or produced on some other principle. *Secondly*, Matter generally passes outwardly and not inwardly; and therefore it is difficult to understand how it makes its way into the cavity of the joint. *Thirdly*, Although Mr Cheston found, in an early period of the disease, that the “ligaments had lost their natural firmness and appearance,” and that “the cavity of the joint was not in the least diseased;” yet, in opposition to this, Mr Cheselden found, “that the heads of the bones were a little larger and softer.” And, *fourthly*, Mr Ford’s dissections would seem to support the conclusion, that the disease begins in the bones and cartilages.

AND in addition to the evidence of dissection, there are various reasonings which might strengthen this conclusion. But we shall not oppose speculation to what is brought forward as demonstrative evidence; yet, as

Mr Ford observes, "the pathology of this disease is certainly most wanting in its earliest stage; for at its conclusion, opportunities too frequently occur, for the minutest examination of the nature and effects of this malady, which is uniformly found on inspection, where it terminates fatally, to go on in its operation, to the ultimate destruction of almost all the bones, ligaments, and cartilages connected with the hip-joint*:" and so of every other joint of the body.

THIS is universally known and admitted; and even Mr Bell himself has brought his different species of the disease to the same destructive and tragical conclusion. They both end in suppuration, rotten cartilages, and carious bones; and either "carry off the patient" or reduce him "to little more than skin and bone." This is the result of the rheumatic as well as the scrophulous species: and now the wonder is about this rheumatic

* Vide Mr Ford's Observations, p. 20.

species of white swelling; for admit that the disease sometimes arises in the ligaments, does this give it any resemblance or any affinity to the nature of rheumatism? No. It partakes neither of the nature of rheumatism nor of any articular affection, because it has neither the same causes, the same phenomena, nor the same termination; it terminates in a manner peculiar to itself. And were there not another circumstance to distinguish it from rheumatism, this is sufficient;—true rheumatism never terminates in suppuration, and far less in rotten cartilages and carious bones. Pure rheumatism is a disease, *sui generis*, and so also is white swelling of the joints.

How this author came to connect rheumatism and white swelling, we know not; nor should we have asked him any questions about the matter, had his attempt been “a means of the subject being more accurately understood.” But instead of the disease being more accurately understood, it is not understood at all, or rather he has laid it deeper

in error: neither should we have inquired into the matter, had his attempt been innocent; but instead of being innocent, it is pernicious, because it is a sort of apology for continuing a practice which we will venture to say never has been, never will be, nor never can be useful in the cure of the disease, but the very contrary. This practice is nothing else but antiphlogistic regimen and antiphlogistic practice; “bleeding and cupping, and scarifying and leeching, and cooling laxatives, and a strict antiphlogistic course, both as to diet and every other circumstance;” and all this, forsooth, because “a rheumatic disposition, or *diathesis* as it is termed, may here too be taken notice of as a principal cause of this species of white swelling; for, in every rheumatic affection, the parts most liable to be attacked are the ligaments of the joints, and other deep-seated membranes. The disorder occurring most frequently in the large joints, especially in the knee, is a strong argument too for the rheumatic disposition having a considerable in-

fluence in its production ; for it is well known, that rheumatism, in its most evident form, does really more frequently attack the larger joints than any of the smaller : And, in fact, we find this species of white swelling occurs more frequently in young plethoric people, in whom the rheumatic diathesis most frequently prevails, than it ever does in those of an opposite temperament.

“ THAT it is the ligaments of the joints only which are first affected in this disorder, is from the history of the dissections rendered evident ; they, in the first stages of the complaint, being almost the only parts that are found diseased. The effusions, into the cellular membrane, of that thick glairy matter taken notice of, are probably occasioned by an exudation from the vessels of these ligaments that have been originally inflamed, it being known that such parts never furnish a proper fluid for the formation of purulent matter : In the course of the disease, indeed, abscesses containing real pus do always appear ;

but never till inflammation has been communicated to the surrounding parts, which more readily afford a fluid proper for that purpose.

“I would therefore, upon the whole, conclude, that this species of white swelling is at first always occasioned by an *inflammatory* or *rheumatic affection* of the ligaments of such joints as it attacks, and that too from whatever cause such inflammation may originally have proceeded *.”

Now we see how easy it is to reason from analogy. When a subject is not understood, it is easy to substitute another in its place, and hold it forth as a true illustration of the subject which it is intended to explain. But if the one subject is as little understood as the other, and if there is no sort of analogy between them, it is fifty to one but the conclusion will be as false as the analogy itself. Of

* Vide the Treatise, p. 411, 412.

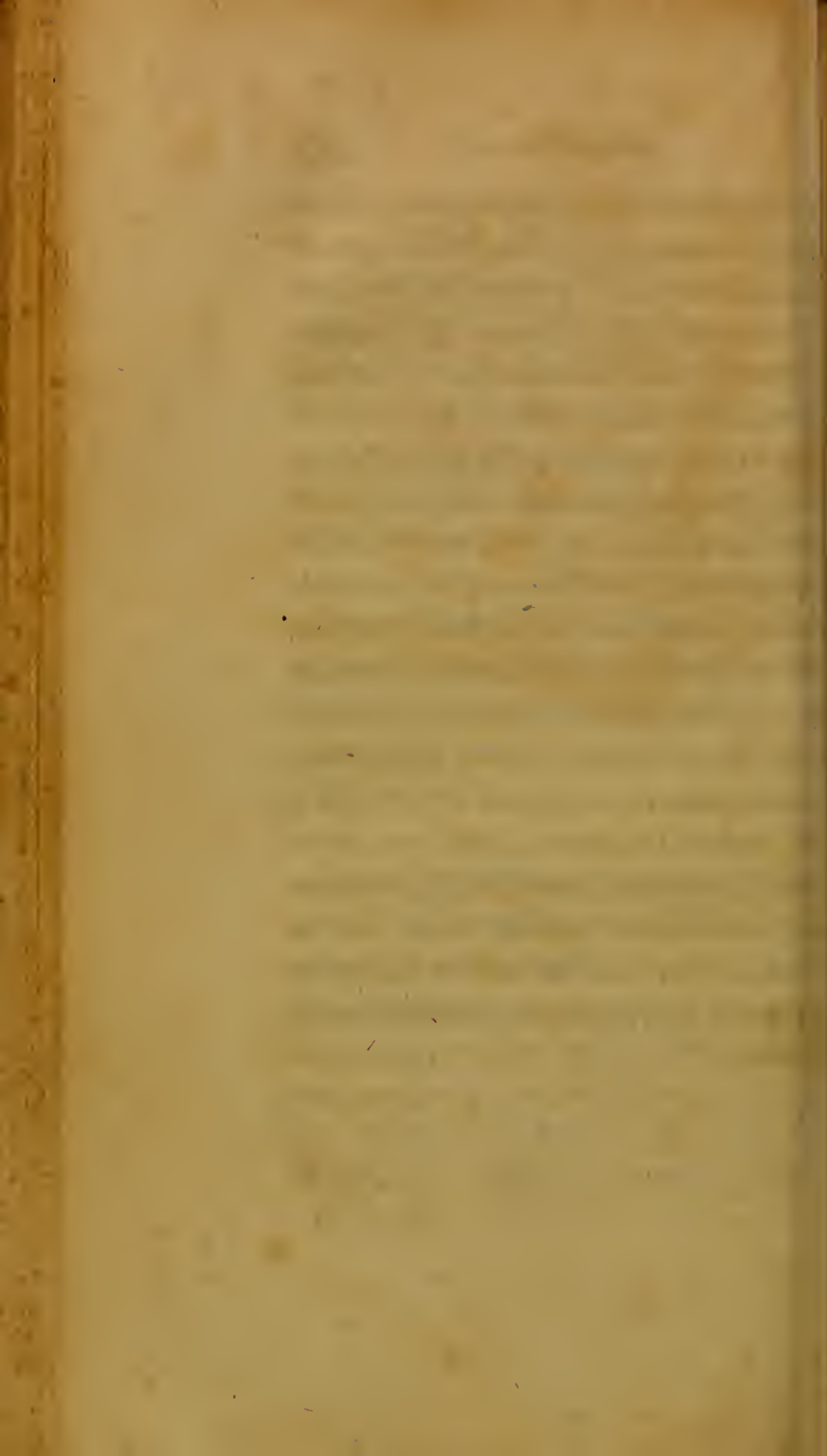
this we cannot adduce a more striking example than the subject immediately before us. Acute rheumatism is brought forward to illustrate the nature of white swelling, and yet there is no sort of analogy between them, neither as to their causes, their symptoms, their terminations, their proper method of cure, nor any thing else. "Therefore upon the whole," we cannot "conclude" that any species or any case "of white swelling is at first always occasioned by an *inflammatory* or *rheumatic affection* of the ligaments of such joints as it attacks."

ACUTE rheumatism is a species of phlegmasia; it is a disease of acute inflammation; it is produced by cold, or by cold and moisture, or by sudden alternations of temperature; it seldom affects either the very young or the very old; it "most commonly occurs from the age of puberty to that of thirty-five years;" it takes place in the prime and vigour of life, and in the most athletic constitutions; it affects the joints, and it is true the larger

joints are most frequently affected ; it abates in one joint and takes place in another ; it flies as it were from joint to joint ; yet it most frequently exists in different joints at one and the same time : the muscles also are frequently affected ; but whether it affects the muscles or joints it ends not in suppuration : there is often effusion and swelling about the joint, but this effusion is reabsorbed : there is often external inflammation, but this inflammation ends in resolution : there is pyrexia, but this pyrexia and every other symptom of the disease is removed by antiphlogistic regimen and antiphlogistic practice ; or if not, the result is chronic rheumatism.

WHITE swelling is not the sole effect of any external cause ; it is the effect of predisposition : it may perhaps be excited by external causes ; but were it not, the predisposition, rheumatism, or some other affection of the joint, would take place, and not white swelling. It does not take place in the prime and vigour of life—it generally takes place before

the age of puberty, when the growth of the body is not completed ; when there is general laxity and debility. It affects the joints, and it is true the larger joints are most frequently affected ; but it does not abate in one joint and take place in another ; it flies not from joint to joint, nor does it scarcely exist in two joints at one and the same time ; it never affects the muscles, though in the hip disease a pain is sometimes felt in the knee : there is always effusion and swelling about the joint, but this effusion is not reabsorbed. In this stage of the disease there is no external inflammation, yet the swelling ends in suppuration ; it ends either in amputation of the limb or the death of the patient ; it is forwarded to these terminations by antiphlogistic regimen and antiphlogistic practice ; it can only be cured, or the joint can only be brought to ankylose, by a practice of a directly opposite tendency.



DISSERTATION III.

OF THE DOCTRINE OF INFLAMMATION, AND
THE CAUSES AND NATURE OF WHITE SWELL-
ING OF THE JOINTS.

—○○○○—

WHEN we find this disease so little under-
stood; when we find rheumatism and white
swelling confounded together, and the pa-
thology of the former imposed on us as the
true pathology of the latter—we should ex-
pect to find that they are one and the same
disease; that they have the same causes, the
same symptoms, and ought to have the same
method of cure. But there are no two dis-
eases more opposite in their nature. Rheu-
matism depends solely on external causes;

white swelling depends on a constitutional or internal cause; their symptoms and terminations are widely different; and surely they ought not to have the same method of cure. Their pathology being distinct and opposite, the method of cure which may be useful in the one must be destructive in the other.

THERE cannot be the least dispute, that the great source of white swelling of the joints is a scrophulous habit of body; because this affection takes place without the certain operation of external causes. In some instances, however, it may be excited by external causes; but we can scarcely suppose that it is ever solely produced by them, for these causes operate in innumerable instances, and with the highest degree of force; they produce other derangements in the joints, but not white swelling. It is indeed so difficult to trace this disease to the certain operation of external causes, and it takes place so frequently where they certainly have not operated, that there cannot be the least dispute

it originates more or less in a scrophulous habit of body.

YET we are told that “in this way may be mentioned, as causes, all such strains as particularly affect the ligaments of the joint, so as to produce inflammation; likewise bruises, luxations of the bones, and in short every affection which can in any degree be attended with that effect*.” This is one way of mentioning causes and effects; and another is, that “a rheumatic disposition, or *diathesis* as it is termed, may here too be taken notice of as a principle cause of this species of white swelling;” and the great argument for this cause is, that “in fact we find this species of white swelling occurs more frequently in young plethoric people, in whom the rheumatic diathesis most frequently prevails, than it ever does in those of an opposite temperament.”

* Vide the Treatise, p. 410.

BUT it is in those of a directly “opposite temperament” that white swelling “most frequently prevails;” and without this temperament, this scrophulous constitution, all the causes which our author has mentioned will not produce the disease. “Strains” affect the ligaments of the joint, so as to produce inflammation; or rather they diminish the tone of the vessels. This diminished energy of vessels admits the accumulation of fluids, and this produces swelling; this swelling is of long continuance; the joint is long weakly and useless, and the greatest pain is felt on motion. But how does all this end? By rest the energy of parts is restored; the contractility of the vessels is renewed; the fluids are propelled; the pain and swelling gradually subside; and the joint again becomes capable of performing its natural motions. In all this there is nothing like white swelling; suppuration from strain is surely no common occurrence; it is not easy to comprehend the connection between this cause and white swelling.

“BRUISES” produce terrible effects in the joints: but still these effects are easily distinguished from white swelling. A fall or blow upon the great trochanter, for example, forces the head of the thigh-bone against its socket; the lining membrane of the joint, the round ligament, and the mucous fimbriæ, are bruised. Hence arises high inflammation, the most excruciating pain, thickening of the soft parts, anchylosis of the joint, suppuration, and carious bones: Yet still this affection of the joint differs in many respects, and is easily distinguished from white swelling. It arises from a bruise of the soft parts within the joint: this injury is immediately followed by inflammation and violent pain; but this inflammation does not always end in suppuration; the pain prevents the least degree of motion, the inflammation subsides, and the patient recovers the use of the limb. In other cases, there is a secretion of bony matter, anchylosis is formed, and this effect is the result of inflammatory action; for it takes place previous to suppuration; and when sup-

puration does take place, and the bones become carious, they are not so deeply affected as in white swelling. Besides, this accident is almost peculiar to the aged and infirm, to those who are unable to defend themselves from falls and blows; while white swelling is peculiar to the young, and takes place on the slightest cause, and most frequently without any external cause at all; ends in suppuration and bursting of abscesses, and carious bones. But in this accident of the hip-joint, the patient often recovers, or continues lame for life, without any of these effects; and if they do take place, it is generally in those periods of life in which the growth of the bones are not completed, and where there are strong suspicions of the existence of scrophula.

BUT of all the causes which have ever been assigned for white swelling, "luxations of the bones" are the most remarkable. The natural effects of this accident is a dislodgement of the bone from its socket; a lacera-

tion of ligaments and other soft parts; inflammation, swelling, and thickening of these parts; and if the bone is not reduced, new actions take place, and a new joint is formed in the surrounding cellular substance; and this joint, though not so perfectly, serves all the general purposes of the natural joint. Now what has all this to do with white swelling? When a luxated bone is replaced in its socket, the patient finds immediate relief; and were it prudent, could throw the limb into its accustomed motions. The swelling of the surrounding parts brings the lacerated parts of the capsule into immediate contact, and they soon become entire. In all this process there is no formation of matter, nor no one circumstance peculiar to white swelling; and neither is there even in cases of unreduced luxation; for as the new joint is formed, the swelling and inflammation gradually subside, and the parts resume their common actions. How then is it possible to regard "luxations of the bones" as a cause of white swelling?

WHITE swelling is rather a frequent disease; but were it caused by strains, bruises, and luxations, how many would feel its effects? These are accidents which happen every day; yet how seldom do we see them followed by white swelling? How seldom do we hear a cause assigned? And when it is assigned, how seldom does it seem adequate to the effect? Can the production of this disease, then, be understood on any other principle than this, that it is connected in some degree or other with an internal cause? In some cases it may be partly produced by external causes; but the internal cause, the predisposition, gives the form and nature of the disease. Strains, bruises, and luxations, produce derangement and laceration of ligaments and other parts connected with the joint, inflammation, pain, and thickening of these parts; but this inflammation generally resolves, and the worst that follows is a lame, feeble, and somewhat stiff, though still an useful, joint. Happy were it for mankind that

white swelling could be as certainly brought to such terminations.

TEMPERATURE, the cause of rheumatism, also produces inflammation, pain, swelling, and thickening of the involucra of joints: but by proper remedies all these effects are removed, and the joint returns to the natural and healthful state; or, at the very worst, this acute is succeeded by chronic rheumatism, which consists in a degree of swelling, stiffness, and pain on motion of the joint; easily affected by changes of weather. This species of rheumatism is a disease of debility; it is founded on that debility which succeeds to the acute species; though it also takes place in some constitutions that have been deranged and debilitated by other causes. But acute rheumatism is not a disease of debility; it takes place in the most athletic and vigorous constitutions; it is a sthenic disease, or a disease of high excitement.

ACUTE rheumatism, then, is a disease of

active and chronic rheumatism ; a disease of passive inflammation : with the former there is the sthenic, and with the latter the asthenic diathesis. But the limits between acute and chronic rheumatism are not easily marked, nor is it possible to draw a line of distinction between active and passive inflammation. But be the body strong or be it weak, be the rheumatism active or passive, it is the peculiar nature of rheumatic inflammation that it never ends in suppuration. Surely, then, there must be an essential difference in the nature of the inflammation of rheumatism and the inflammation of white swelling : And were all inflammations of the same nature, and only different in degree, the inflammation of acute rheumatism and that of white swelling would surely stand on a very different footing, even with respect to the strength or weakness of the body.

OF THE

DOCTRINE OF INFLAMMATION.

BUT there is no such simplicity or uniformity in the nature of inflammation. It surely does not depend simply on the strength or weakness of the body. One inflammation arises from a chemical, and another from a mechanical cause—a third from a specific poison or contagion, and a fourth from a cause existing in the constitution. The causes, therefore, of inflammations being different, they must also be different in their nature, and have different phenomena and different terminations. One inflammation is easily resolved, another with difficulty, and a third naturally and necessarily terminates in suppuration. All these effects, generally speaking, are modified by the nature of the exci-

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ting causes of inflammation, and the degree of force with which they operate; and not altogether by these circumstances, but also in some measure by the state of the body, and the nature of the part on which they operate. Temperature, for example, the most common exciting cause of this affection, produces inflammation in one body; and this inflammation is susceptible of resolution: yet, operating with the same degree of force, the inflammation which it produces in another body unavoidably terminates in suppuration.

FROM these facts, we learn that the common doctrines of inflammation are not well founded—the doctrines of a phlogistic diathesis—excessive excitement—and increased action. The doctrine of a phlogistic diathesis is beyond all evidence and reason; and therefore it would be absurd to dispute about it. But we may briefly inquire, how far inflammation may be considered as depending on over-excitement and increased action?

And having made this inquiry, we shall come to learn that white swelling neither depends on a phlogistic or “a rheumatic disposition, or *diathesis* as it is termed,” nor on plethora, nor on over-excitement, nor increased action.

ACCORDING to this doctrine of excitement, the general vigour or excitement of the body regulates every thing. It is the cause of health and the cause of disease. Suppose a scale of excitement—the medium of excitement is supposed to constitute health, and its increase or diminution to constitute disease. Its increase constitutes the *sthenic* diathesis and *sthenic* diseases, and its diminution the *asthenic* diathesis and *asthenic* diseases. The former are diseases of excessive or over-excitement; and the latter are diseases of debility. “In this way, *then*, there are four *sets* of inflammation, two universal, a *sthenic* and an *asthenic*, and two local; one of which is *sthenic*, and the other *asthenic* *.”

* Vide the Elements of Medicine by Dr Brown.

THE sthenic universal inflammation is considered as “nothing else but a state of the inflamed part of a common nature with *that in* the rest of the body. And as the inflammation is produced by a greater degree of excitement in the inflamed than in any other equal part; so, before the disease comes on, of which the inflammation is only a part or symptom, the excitement of that part is understood to be proportionally greater than in any other part”—In the following manner—“Suppose the excitement in every part of the system to be 45 at some point in the period of the predisposition, and 54 in the part to be inflamed; after the coming on of the disease the same proportion will hold; when the excitement has now mounted up to 60, the excitement of a part will be understood to have gone to 69; keeping up still the same proportion.”

ON the other hand, the asthenic universal inflammation is considered as “nothing else, but a state of the inflamed part, of *the same*

kind with that of *all* the rest of the body. And, as the inflammation is constituted by a lesser excitement in a part, than in any other equal part; so, before the arrival of the disease, of which the inflammation is a part, a symptom, or sequel, the excitement of that part is understood to be proportionally less, than that of any other part."

So much for the sthenic and asthenic universal inflammations. According to this doctrine, they are not to be considered as local affections; they depend upon and are modified by the general excitement; they are merely symptoms of general disease, inasmuch as they do not arise from local causes, but from the degree of general excitement. But the local inflammations do not arise from the general excitement; they arise "from local hurtful powers, and depend upon a fault in the organ, or a solution of continuity, whether as being the effect of puncturing, cutting, bruising, compression, erosion from acrid matter, or from heat, or cold;" they

may produce disturbance in the system by their local irritation, and affect the excitement; but at their production they are merely sthenic or asthenic, according to the existing degree of excitement as produced by other causes, which either increase or diminish the general excitement.

THIS author strains hard to render what he terms universal inflammation conformable to the simple increase and diminution of excitement. But of all diseases the doctrine of excitement will least apply to the phlegmasiæ: for inflammation is in fact a local disease; it is produced by local causes, by causes which carry the excitement of the inflamed part beyond the boundaries of the general excitement; in short, the universal inflammations stand nearly on the same footing with regard to the general excitement as those inflammations which arise from the most strictly local causes; from "puncturing, cutting, bruising, compression, erosion from acrid matter, or from heat, or cold."

AND what else is the cause of the universal inflammations but "heat and cold?" And when "heat and cold" produce inflammation, how do they operate? Our author has told us, "The inflammation, which accompanies the phlegmasiæ, occupies an external part, as far as its nature has been yet ascertained. And the reason of that is, that heat, which is the most powerful hurtful agent in those diseases, either alone, or alternating with cold, or succeeding to it, has much more power externally, where it is directly applied, than internally, where the temperature is nearly stationary, in stimulating, and, therefore, raising the general diathesis, to the degree of actual inflammation in a part. Hence the throat, hence the different joints, hence the face, where the form of inflammation is different, hence the lungs, which are to be considered as an external part, because the air has direct access to them, *all these* are affected with inflammation in preference to other parts." And for what reason? Because the part to which

“the forcible energy of the exciting powers is applied, runs sooner than most others into indirect debility.” These are our author’s own principles; and what more is wanting to show that inflammation is a local disease, and that it does not depend simply on an increase or diminution of the general excitement?

BUT in all the detail of this doctrine of excitement, there is nothing more puzzling than this position, that in sthenic inflammation the excitement of the inflamed part is higher, and in the asthenic lower, than the general excitement. In both cases the inflammation is produced by “heat either alone, or alternating with cold, or succeeding to it;” and therefore in both cases the effect must be the same. If these causes raise the excitement of the part on which they operate above the general excitement under the sthenic, they must produce the same effect under the asthenic diathesis; or if they reduce the excitement in the latter case, they must also do it in the former. Were the sthenic

inflammation caused by the increased and continued action of heat, and the asthenic by its deficient action, then in the former case the excitement of the inflamed part would be kept higher, and in the latter lower than the general excitement. But as in both cases the causes are the same, it is impossible that the excitement in the inflamed part can be raised above the general excitement under the sthenic, and reduced below it under the asthenic diathesis. Whatever may be the degree of general excitement, the excitement of an inflamed part must either be above or below it; and whether the one or the other, will best appear by an analysis of the operation of temperature in the production of inflammation.

CONCERNING this analysis, however, there are some difficulties; for although it is indisputable that inflammation is produced either by the direct increase or decrease of temperature, to a certain extent above or below the healthful point, as well as by alternations

of temperature within a more limited range of scale; yet we know not the precise degree of temperature most conducive to health, nor can we point out those degrees of temperature which produce inflammation. But supposing 64° to be the healthful point, temperature produces inflammation in the following manner: *First*, by its direct increase; *secondly*, by its direct decrease; and, *thirdly*, by its increase and decrease alternating with each other*. Its excessive action is seen in

* THUS I have stated 64° as the healthful point. This temperature, in our climate, is termed agreeable. It is pleasant to the feelings of most people; yet perhaps it is not that temperature which is most conducive to health; probably the arithmetical mean of that range of temperature which we experience may be the healthful point. Now the most extensive range of temperature which we commonly experience in Britain is between 20° and 80° . Hence we may suppose, that the mean between these, or 50° , is probably the most healthful. This point must also vary in different climates, from the habits induced in the body by the range of temperature to which it is subjected.

scalds and burns; its deficient action in chilblains and frost-biting; and its increased or diminished action within a more limited range of scale, or rather the alternations of its action are seen in the phlegmasiæ.

FIRST, inflammation is produced, and the texture of the part is destroyed, by the excessive action of heat. For example, the heat of boiling water, or of a piece of heated iron, or the heat of flame, as of burning clothes, actually destroys the texture of the part to which it is applied. It produces high inflammation, then sloughing of parts and ulceration. The heat is diffused through the part,

NUMBERS might also be assumed, to denote the degrees at which inflammation is produced by the direct increase or subduction of the natural temperature; and these might be in some respects true, and in others false. All this must depend on the conducting power of the substance applied to the body. Thus air, at either a considerably high or low temperature, might not induce inflammation; but iron, or other good conductors of heat, would instantaneously produce the effect.

excessive action is produced; this action ends in the death of a certain portion of the living matter, a deep slough is separated, and there remains a deep, extensive, and highly inflamed ulcer. This ulcer is surrounded with high inflammation, and it granulates and heals but slowly; the energy or excitement of the surrounding vessels is destroyed by the excessive action of heat; there is imperfect or morbid action, and a slow and tedious reproduction of the lost substance.

SECONDLY, inflammation is induced, and the texture of a part destroyed, by the excess of cold, or the deficient action of heat. The too great reduction of heat produces chilblains, frost-biting, or gangrene. The part first inflames, then tumefies, and then mortifies. If it suppurates, it heals slowly; if it gangrenes, the dead parts are slowly separated, and there is a slow reproduction of the lost substance. There is inflammation and a languid action in the surrounding vessels; the energies of the surrounding parts are weakened by the

too great abstraction and deficient action of heat.

THESE are the effects of extremes of temperature in regard to the living body ; but inflammation is more frequently produced by the increased or diminished action of heat within a more limited range of scale, or rather by alternations of temperature. For example, when the temperature rises to a certain extent above the healthful point, then suddenly falls to a certain extent below it, direct is superinduced to a certain degree of indirect debility. Hence the production of inflammatory affections by a decrease of temperature ; as when warm summer weather is suddenly succeeded by a cold and moist atmosphere. On the other hand, when the temperature falls to a certain extent below the healthful point, and suddenly rises to a certain degree above it, then indirect is superinduced to a certain degree of direct debility. Hence the cause of inflammation by

an increase of temperature; as when the vernal heats suddenly succeed the winter colds.

WHAT, then, is the state of an inflamed part? It is unquestionably a state of derangement or debility. Inflammation is produced by extremes of temperature with regard to the animal body: it is produced by the powerful action of heat; and the effect of this action can be nothing else than a destruction or diminution of the living power of the part on which it operates. This is the natural and necessary effect of the action of every powerful stimulus. In the first instance, the actions of the part are highly excited; there must be an impetuous driving of the blood; but it will rush in with equal impetuosity from every surrounding part: Soon, however, the injured vessels lose their power of contractility; their diameters become enlarged; a congestion of the blood takes place: now there is great distension and painful irritation; this irritation is felt by the arterial branches which supply the inflamed vessels;

the blood is still forcibly propelled into them ; there is great distension, and throbbing, and pain, and universal symptoms of pyrexia. This is active inflammation.

BUT in every case of inflammation, whether from the excessive or deficient action of heat, or from alternations of temperature, there is a congestion of the blood in the inflamed vessels ; and therefore the diameter of these vessels must be enlarged, they must have lost their power of contractility. This is the natural and necessary effect of deficient as well as excessive action ; but these alternating with each other, must also produce the same effect. It is easy to conceive that vessels which have been over-excited will be more apt to suffer from the deficient action of an exciting power, than those which have been preserved in healthful action ; and, *vice versa*, those which have had their vital power in part destroyed by the eduction of a stimulus, will be more apt to suffer by its sudden and increased reapplication. This is fully

exemplified in those cases of inflammation produced by alternations of temperature; and from the frequent occurrence of inflammation from this cause, this mode of its action must be equal, if not greater, in hurtful power to the greater extremes of heat and cold.

UPON the whole, then, this analysis of the operation of temperature in the production of inflammation, clearly shews, that in no case the excitement of an inflamed part is superior to the general excitement. Its operation is local; it operates on all the parts with which the air comes in contact in its passage to the lungs; hence inflammation in the mucous membrane of the nose and catarrh, and the different species of quinsy or cynanche; it operates on the viscera of the thorax, and their investing membrane; hence pneumonia and peripneumonia*; it operates

* The internal fauces, and the thoracic viscera, are peculiarly liable to inflammation; because they are ac-

on the surface of the body, and parts near the surface; hence erysipelas, rheumatism, &c.: It operates either excessively or deficiently, or its increased and decreased action alternate; and in all these forms of its action it produces inflammation: It deranges or debilitates the part on which it operates; for this is the natural and necessary effect of either the increased or diminished action of every powerful stimulus; and therefore the excitement of an inflamed part is in no case higher than the general excitement; and as the vessels are unable to propel their blood, it would seem that they are not under a state of increased action.

WERE they under a state of high excite-

cessible to the air in respiration. Besides, as a higher temperature is natural to these parts than to the external surface of the body, may we not suppose that they are less capable of bearing its alternations, and more especially its diminutions? Does not this in some measure explain the frequency and severity of inflammatory affections in the fauces and thoracic viscera?

ment and increased action, the common applications, for the cure or resolution of inflammation, could not fail to prove hurtful. These are stimulants and astringents, and not sedatives. They soothe the inflamed part, as it were, and remove pain; but inasmuch as they do this, they excite the vessels to action; they cause their contraction, and establish the due relation between them and their natural exciting power, the blood; they excite them to action, and restore their due arrangement and healthful excitement; they excite them to the reproduction of destroyed parts. What else is the effect of turpentine in the cure of scalds and burns? of heat, the different preparations of lead, opium, &c. in the cure of common inflammation? of astringent and spirituous gargles in the cure of the common inflammatory sore throat? of blisters in the cure of peripneumony? of all the applications which have been made to inflamed eyes, whether by regulars or empirics? in short, of every substance which has been found useful in the resolution of inflammation? They

are all stimulants and astringents in one form or another; they all excite inflamed vessels to action and contraction; and therefore they bring additional proof, that the state of inflamed vessels is a state of derangement or debility, and not a state of true increased action.

Now, as the exciting causes of inflammation operate locally; as they seem capable of deranging or debilitating the part on which they operate; as this state is indicated by a congestion or accumulation of the blood in the inflamed vessels; and as inflammation is resolved by the action of stimulants and astringents—it is plain that it does not depend simply on the increase or diminution of the general excitement. Did it depend simply on the rise or fall of the general excitement, it could not appear in a local form; it would pervade the whole system.

BUT the author of the doctrine of excitement, in order to support his hypothesis, that

inflammation is caused by the simple rise and fall of the general excitement, contends, that, “the general affection for the most part precedes this local one;” *i. e.* the symptoms of pyrexia, for the most part, precede the inflammation. “Long before any part of this doctrine was discovered,” says he, “when I was in search of certain facts respecting peripneumony and pleuritis, I discovered one which I was not looking for, of more importance than all the rest put together. It had been asserted, by most systematics and all the nosologists, that the primary symptom in the phlegmasiæ was the inflammation of a part. I saw that was not true with respect to rheumatism, in which the general affection or pyrexia often rages one, two, or three days before the sign of inflammation, pain, is perceived in any of the joints. I could also discern, that from the moment the pain and inflammation appeared in erysipelas, or the rose, there was also the general affection equally conspicuous. In short, in no one of that set of diseases, did the fact appear that

the inflammation was primary, and the pyrexia, or affection of the whole system, dependent upon it. But as peripneumony was said in Edinburgh to be an exception, the detection I made equally disproved that in all the works of Morgagni, where peripneumony and erysipelas are treated, and in all those of Trillerus, a professed writer on that subject, and in a thesis in Sandiforth's *Tthesaurus*, taken from no less than 400 cases of that disease (for they are now by others, as well as me, considered as one), I found that in somewhat more than one-half of the given number, which was very respectable, the general affection appeared from one to three days before the pain came on, and in all the rest of the cases; that though, for any thing these authors said to the contrary, they might sometimes have come on together, yet there was not one, in which it could be fairly alleged that the pain was the first and primary appearance. Hence I found, that all the theories raised upon that hypothesis of course

fell to the ground. Indeed the fact is quite consistent with every one here*."

YET notwithstanding of all this, our author could discern, "that from the moment the pain and inflammation appeared in erysipelas, or the rose, there was also the general affection equally conspicuous." And in nearly the one-half of the cases contained in the thesis in Sandiforth's Thesaurus, the general affection, and the inflammation, "might come on together:" nay, the latter might precede the former, for any thing we are told to the contrary; at least it does not appear that the general affection preceded the inflammation. Moreover, according to Dr Cullen, peripneumony "almost always comes on with a cold stage, and is accompanied with the other symptoms of pyrexia;" nay, "in a few instances, the pulse may not be more frequent, nor the heat of the body increased beyond what is natural." And "sometimes the pyrexia is

* Vide Elements of Medicine.

from the beginning accompanied with the other symptoms; but frequently," instead of its being formed from "one to three days," it is only "formed for some hours before the other symptoms become considerable, and particularly before the pain be felt;" then, "for the most part, the pulse is frequent, full, strong, hard, and quick; but, in a few instances, especially in the advanced state of the disease, the pulse is weak and soft, and at the same time irregular."

THE changes of the pulse, and the rise and fall of the other symptoms, keep pace, as it were, with the inflammation. The disease comes on with a cold stage: the cold stage is attended with, and succeeded by, other symptoms of pyrexia; these symptoms are higher or lower in degree, according to the degree of force in the action of the exciting cause, and according to the nature and extent of the part inflamed. According to the same circumstance, the inflammation comes on with them, or sooner or later after them; but the

inflammation being fairly established, the local affection, operates as a powerful stimulus to the system. Now the symptoms are in their most severe form ; the pulse is frequent, full, strong, hard, and quick ; the heat of the body is greatly increased :—but as the disease advances, as the excitement is diminished by the excessive irritation or stimulus of the local affection, the pulse becomes weak, and soft, and sometimes irregular—or as the irritation of the local affection, and the excessive excitement which it produces, is removed by the proper remedies, every symptom gradually abates, and the pulse and heat of the body become more and more natural.

WERE it not the stimulus, or irritation of the local affection, there would be nothing but catarrh or simple synocha ; or were the body under the asthenic diathesis, there would be nothing but febrile or typhoid symptoms—symptoms of debility. Yet, says Dr Brown, “The phlegmasiæ are sthenic diseases, accompanied with inflammation in an external

part, as has been said somewhere before, according to the definition of nosologists. But, as there is no difference betwixt them and synocha or the catarrh, which latter are unaccompanied with inflammation, we therefore pay no regard to the distinction; and shall regard nothing either in these or any other diseases, but what is constituted by a real difference of excitement. It is the excitement by which we are to be guided through our whole distribution of diseases*." But it is obvious that the doctrine of excitement will not apply to these diseases; for there is a great difference between some of the phlegmasiæ and synocha or the catarrh. These are mild diseases when compared to some of the phlegmasiæ. Catarrh is a mild disease—neither the local affection, nor the pyrexial symptoms, are severe; and, whatever may have been said to the contrary, it is most readily removed by heat, warm cordial drinks, and perspiration. Who has seen the same

* Vide Elements of Medicine.

degree of pyrexia—the same severe, violent, and acute symptoms in catarrh and synocha as in peripneumony? or who has seen synocha or the pure inflammatory fever at all?

THIS disease is constituted by the phlogistic diathesis according to Dr Cullen, and by the sthenic diathesis according to Dr Brown. It is a disease of excessive excitement; yet, like those diseases that “are more strictly called fevers,” it has no “topical affection that is essential and primary, such as the other orders of the pyrexia always have.” This is the most remarkable of all diseases; for it is difficult to understand either its production or existence; and it is as difficult to conceive how it got a place in nosological arrangement. It is a phlogistic disease, or a disease of over-excitement; it is, as it were, an exuberance of health. It must therefore be produced by the operation of powerful stimuli; of stimuli which operate in a higher degree than is necessary to produce health; which raise the excitement above health, as

it were, and produce disease. But if stimuli operate in this degree, will they not derange or debilitate the animal structure? will they not produce indirect debility and deficient excitement? Debility is the necessary effect of the operation of a powerful stimulus; and therefore is it not a fair conclusion, that in whatever degree the stimulus operates above what is required to produce health, that it will produce a proportional degree of indirect debility? At all events, how can the sthenic diathesis be supposed to exist after the stimulus has ceased to operate? If it has not operated to the extent of producing indirect debility the moment that it ceases to operate, the excitement, if it falls no lower, must fall to the healthful point; and therefore, it seems a reasonable conclusion, that the sthenic diathesis has no existence in nature. Besides, it seems incongruous in language to call the highest state of health a disease. How, then, are we to understand the existence of synocha, or the pure inflammatory fever? It can only exist but for a moment, comparatively speak-

ing. Abstract the stimulus, or the exciting cause, and it is gone. Bleeding, and other evacuations, and antiphlogistic regimen, are superfluous and unnecessary. It is most probably an imaginary disease.

It is not therefore “the excitement, by which we are to be guided, through our whole distribution of diseases.” Were all diseases founded on nothing else than various degrees of excitement, they would all assume the same form: there would be no different modifications of disease; no variations of symptoms, but merely in degree. But every disease, generally speaking, assumes its respective form, according to the nature of its exciting cause; and therefore diseases must depend on something else than either excessive or deficient excitement. This is notorious with regard to the phlegmasiæ; for the morbid actions of the system continue, after there can be no possible reason to apprehend increased excitement, after the patient has been bled, and bled, and bled again, after a

due course of antiphlogistic regimen and antiphlogistic practice—yet the morbid actions of the system continue, and, who would believe it, the patient sometimes dies. Now how are these facts to be explained? The morbid actions of the system cannot be owing to the exciting cause, for it has ceased to operate; nor can they be owing to the excessive excitement, for, be assured, it has been sufficiently diminished. What, then, can they be owing to? To nothing, surely, but the local affection, acting as a stimulus to the whole system, causing stronger or weaker reaction, according to the nature, extent, and importance of the part inflamed—or, according to the degree of excitement, existing in the body previous to the coming on of the disease—or rather, according to the degree of excitement induced by antiphlogistic regimen and antiphlogistic practice. How the patient sometimes dies, let others determine: But we should suppose that the local stimulus, or irritation of a highly inflamed, sensible, or important part, in a body so emptied,

that there is left not “one particle of food in the primæ viæ, or one drop of blood in the arteries, more than is barely necessary to preserve them in action ;” in such a body, surely such a local affection is a very dangerous thing.

WERE the phlegmasiæ produced merely by excessive excitement, the antiphlogistic regimen and practice could not fail to remove them. There is nothing so easy as to reduce the excitement ; and once reduced, the morbid actions of the system could not fail to disappear. This must be the effect even in the most severe form of the disease ; in the most severe form of the local affection. But in proportion to the severity of this affection, it has a proportional influence over the system ; and the general symptoms are therefore proportionally difficult to remove. How often is the complaint heard—the patient has been bled, and bled, and overagain bled, with little or no abatement of the symptoms ; or, in the common language of the

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subject, the pulse has not come down ; or it has come down, but is rather increased than diminished in frequency : yet here is ample proof that the excitement is sufficiently diminished ; the pulse is quick, weak, and soft ; blood and other stimuli have been abstracted ; the sum-total of stimulant power (so to speak) is diminished in the system, and therefore the excitement must be reduced. But a proportional change has not taken place in the local affection ; it is without the limits of the excitement, as it were ; it stands on a somewhat similar footing as the local inflammations which arise “ from local hurtful powers, and depend upon a fault in the organ, or a solution of continuity, whether as being the effect of puncturing, cutting, bruising, compression, erosion from acrid matter, or from heat, or cold ;” and therefore it continues to stimulate or irritate the system.

Thus it appears that inflammation neither depends on over-excitement in the system at large, nor in the part inflamed. The exciting

causes of inflammation naturally and necessarily derange or debilitate the part on which they operate : and those very powers which would raise the general excitement above the healthful point indirectly destroy it ; they over-excite the actions of the system, and produce indirect debility ; or, short of this, and having ceased to operate, the system returns to the healthful point of excitement. Over-excitement, or the sthenic diathesis therefore is a thing without proof ; it cannot exist ; and therefore the pyrexial symptoms, or the increased actions of the system, must be owing to the stimulus or irritation of the local affection.

THERE is nothing so preposterous as the doctrine which has been held concerning predisposing causes, and predisposition to inflammation. “ The most remarkable of these is, a full plethoric habit of body, induced either by a very nourishing diet or want of exercise ; or, perhaps, by a combination of both. These disorders, too, are observed to

be more frequent in young than in old people, and in men than in women *,"

How all these things should happen, or come to pass, we are not informed; how "a full plethoric habit of body" disposes to inflammation; nor how it is "more frequent in young than in old people, and in men than in women." But if we mistake not, the meaning of the whole is, that the most athletic, vigorous, and healthful, are most liable to inflammation. A very nourishing diet, and want of exercise, and more especially a combination of both, is understood to produce plethora; it is the commonly received opinion, that the young are more vigorous than the old; and it is generally thought, that men are more robust than women. The most plethoric, vigorous, and robust therefore, are supposed to be the subjects of inflammation. Yet it is somewhat odd, that in this respect, inflammation should differ from every other disease;

* See the Treatise, p. 24.

for it is perhaps an universal truth, that the health and vigour of the body, forms its power of resistance, to those causes which produce the morbid state; or, in other words, in proportion as the body recedes from health, morbid agents have proportionally the greater power over it. This is equally true with regard to inflammation. In proportion to the derangement or debility of the body, it is proportionally liable to inflammatory affections, and these affections to unfavourable terminations.

IN support of this position, we have only to advert to the consequences of surgical operation; to the greatest, and most important discovery, in modern surgery, the reunion, or adhesion of cut surfaces. In a sound and healthful constitution, this process speedily takes place, and the reunion of divided parts is soon effected, provided they are brought into direct and immediate contact. Certain local circumstances may prevent this effect; but these have nothing to do with the

general question. The doctrine of adhesion is a fixed and established doctrine, and the reunion of cut surfaces is a common and necessary effect of a sound and healthful constitution. Here there is no inflammation, or it is only in a very slight degree; it ought not to bear the name of inflammation, because it is rather a strong and healthful action of the vessels, restoring the healthful economy of an injured part. That injury, indeed, produces a slight degree of inflammation, but it goes no farther; it is prevented by the healthful and vigorous activity of the solids, and it speedily terminates in the reunion of the divided parts.

BUT the converse of all this takes place in a deranged or debilitated constitution. In this constitution the same wound inflames; it refuses to unite, as it were; it swells, separates, and opens; it discharges a thin, ill-digested matter; there is oozing of blood, and bursting of arteries; gangrene of the soft parts, and exfoliation of bones. All these

are the effects of a deranged or debilitated constitution, and the greater the debility, the greater the inflammation, fever, and pain, and every untoward symptom. It is the strength or weakness of the body that modifies the reunion of cut surfaces, or the healing of wounds. In a sound and healthful body, a wound adheres; in a deranged or weakened body, it inflames and suppurates; and in a still more highly weakened and diseased body, it inflames and mortifies.

It is then the sound and vigorous state of the animal body which forms its power of resistance to the injuries of the knife, and disposes wounds to heal. The same power extends its influence, as it were, to every other mechanical injury; to every exciting cause of inflammation; nay, to every exciting cause of disease. In every strain and every bruise, it is the vigorous and active state of the vessels, which disposes to the absorption and circulation of extravasated and accumulated fluids, prevents the worst con-

sequences, and shortens the duration of the injury. The same vigorous and healthful state resists the force of every chemical cause of inflammation; and when these causes do operate to the extent of producing inflammation, or destroying the texture of parts, the healthful excitement of the body disposes the inflammation to resolve, or to suppurate kindly; prevents gangrene; and when it does take place, throws off dead and mortified parts, and reproduces the lost substance. The venereal virus has no such power in a sound as in a deranged constitution; and in proportion as the body is sound and vigorous, venereal ulcers are proportionally disposed to heal. In a deranged and unsound constitution there is the confluent, and in a sound constitution the distinct small-pox. And when inflammation and suppuration take place from an internal cause, as in the case of critical abscesses, as they are termed, and in scrophula, the true treatment is to restore and increase the vigour and energy of the system. In short, inflammation, in all its

forms and shapes, and from whatever cause it may arise, differs not in this respect from any other disease; the more vigorous and healthful the body is, the more will it resist the influence of every cause of inflammation; and in proportion as it recedes from the healthful state, or is deranged or debilitated, these causes have the greater power over it.

THIS doctrine is strictly applicable with regard to every other disease; and how an opposite doctrine should have been seen set up with regard to inflammation, it is not easy to conceive; how health and strength should predispose to inflammation; how it is founded on an exuberance of health and vigour; on a phlogistic diathesis and over-excitement, requiring for its cure the most low and impoverishing diet, profuse and powerful evacuations; antiphlogistic regimen, and antiphlogistic practice: Yet in the true philosophy of the subject, neither the doctrine nor the practice is supported. The predisposing causes do not produce plethora,

nor establish an exuberance of health and vigour; neither do the exciting causes establish over-excitement. "A very nourishing diet or want of exercise," and more especially the conjoint operation of these causes, may seem at first sight to produce "a full plethoric habit of body." But this is not their true and permanent effect; for while they seem to increase the quantity of the fluids, they also increase the quantity of the secretions; they produce corpulency or obesity, and not plethora; and while they produce corpulency, they produce debility. A very nourishing diet oppresses the powers of nature, as it were; and while it gives strength, in the first instance, it soon decreases it. Indolence, or want of exercise, is a powerful cause of debility; and while a person employs a very nourishing diet, and is at the same time indolent, he will be sufficiently corpulent, but deficient in strength or vigour: he is incapable of exertion, and easily fatigued; he is luxurious, indolent, and corpulent; yet most probably not more pletho-

ric than his slender and labouring neighbour ; he is the prey of gouty inflammation, of erysipelas, &c. while the temperate, active, and vigorous man, knows, comparatively, little of them.

THIS has been a great error in pathology ; confounding corpulency with plethora, or supposing the former an indication of the latter, as well as an indication of vigour, increased action, and phlogistic diathesis. The more important effects, of those powers which produce corpulency, have been entirely overlooked. Excess in eating, and drinking, and indolence, while they produce corpulency, most certainly derange or debilitate the animal constitution ; and this is the constitution most liable to inflammation : it is liable to inflammation on the slightest causes, while the same, or much more powerful causes, produce no such effect in the vigorous and healthful body. This we hold to be a true doctrine ; for on a fair and full investigation of the subject, it would be found, that the con-

stitution most liable to inflammation is the deranged and debilitated constitution; whether as arising from the excessive or deficient action of the ordinary powers of life, or from other causes. This affection is not *more frequent in young than in old people*, because they are young; nor *in men than in women*, because they are men. The debility of youth and of old age predisposes to inflammation; and the deranged or debilitated of either sex are equally obnoxious to the influence of its exciting causes. In every age, and sex, and condition of life, it is derangement or debility that predisposes to inflammation: the rich are predisposed to it by excess and indolence; the poor, by want and labour; while the temperate and active man, sound and vigorous in constitution, resists the influence of those causes which produce it.

FROM all this it might seem, that the common practice employed in inflammation ought to be entirely discarded; that the body ought

to be invigorated, and not debilitated ; and that antiphlogistic regimen and evacuations must increase the effects both of the predisposing causes, and of the more immediate causes of the disease. And this is undoubtedly the effect of the practice. When inflammation takes place in a body deranged or debilitated, showing typhoid symptoms, or symptoms of great debility, antiphlogistic regimen and antiphlogistic practice is as dangerous, and as destructive, if not more so, than in putrid fever, or even the plague itself.

THIS method of cure, therefore, is not admissible in a weakened and deranged body ; it cannot fail to increase the predisposition, as well as the more immediate effects of the exciting causes of the disease. It is only applicable in the vigorous constitution, where there is high excitement ; where the exciting causes of inflammation have operated forcibly ; and where the local irritation of the inflamed part acts as a power-

ful stimulus to the system, causing forcible re-action or severe symptoms of pyrexia. Here antiphlogistic regimen and evacuations are indicated, to diminish the sum-total of stimulant action, that the system may not become dangerously exhausted; to diminish the stimulus of the blood and other stimuli, while the irritation of the local affection is to be removed by local remedies, and thus conducted to a favourable termination.

BUT this antiphlogistic method of cure has also its limitations. It is not to remove over-excitement; for it has no existence. Nay, there is probably under-excitement; for, according to Dr Cullen, the phlegmasiæ begin with the same general symptoms as those diseases which are more strictly called fevers; and these symptoms are symptoms of debility. Some exciting causes of inflammation, while they operate locally, and diminish the excitement of a part, may also operate generally, and diminish the general excitement. But at all events, there are no

good grounds to suppose the existence of over-excitement, or the sthenic diathesis. On this principle, therefore, antiphlogistic regimen and evacuations are neither supported nor indicated. This practice is indeed indicated to diminish over-excitement; but this excitement does not exist previous to the inflammation; it is caused by it; and therefore it is only indicated to diminish the sum-total of stimulant action operating on the system; yet this may be overdone, and has been too often overdone. It is easy to diminish the general excitement; but the local stimulus, or irritation of the inflamed part, is not thus proportionally removed. It continues to operate; and while the system is thus impoverished and debilitated, the local affection gets an ascendancy over it, as it were, and there is reason to fear that sudden death is often the consequence.

By this practice, the system is brought into a somewhat similar state as in those inflammations of the most passive kind; as in some

inflammations of an erysipelatous nature, where there is every typhoid and weakly symptom, and where the practitioner is often surprised with the sudden death of his patient. Thus also is he often surprised, even in a seemingly vigorous state of the system, as in some cases of pneumonia: but whether it is owing to the severity of the affection, or to the nature and importance of the parts inflamed, or to the steady and decided observance of the antiphlogistic regimen and practice, it may not perhaps be easy to determine.

THIS subject, therefore, would require much thinking; it would require to be viewed in every different light; the state of the system at large would need to be considered; there is need to be aware that, in every case of inflammation, antiphlogistic regimen, and antiphlogistic practice, are by no means applicable; that it is not applicable to remove over-excitement, but to moderate the excitement and pyrexial symptoms that are caused by the stimulus of the local affection; that

in the greater number of cases it is not applicable at all, but that a practice of a directly opposite tendency ought to be employed.

WERE all inflammations founded simply on the comparative strength or weakness of the body; could a line of distinction be drawn between active and passive inflammation; and could they be correctly and distinctly arranged, in each division, in an ascending or descending series, according to their degree, or rather according to the degree of the general excitement, the method of cure would be greatly elucidated. We should know when to nourish and support the body, or when to employ evacuations and antiphlogistic regimen; when to stimulate and when to debilitate; and how far either of these modes of practice ought to be employed. But this mode of arrangement is too ideal, and cannot be put in practice. For suppose, that all inflammatory affections depended simply on the comparative strength or weakness of the body, the inflammation at the foot of the

class active would meet that at the head of the class passive, and we should be perplexed to know to which class it belonged. Besides, the same inflammation is sometimes active and sometimes passive, according to the existing vigour or weakness of the body. Our judgment therefore must be led by previous and existing circumstances; by the degree of strength or weakness existing previous to the inflammation; by the nature and degree of force in the action of the exciting cause; by the consideration, whether it has operated locally, or both generally and locally; by the degree of vigour or weakness in the body as indicated by one and all the symptoms; and by the nature, importance, and extent of the part inflamed; to learn from all these things, that because a part is inflamed it is of no account when compared to the general state of the system; that it is the general state of the system that is chiefly to be regarded in conducting the method of cure; that the common practice in the cure of inflammation is only applicable in a vigorous state of

the system; that in proportion as the body recedes from health, or is deranged or debilitated, antiphlogistic regimen and evacuations are proportionally inapplicable; and that in the far greater number of cases inflammation is to be cured by a practice of a directly opposite tendency. These things require serious and sober thinking; because it is easy to reduce the body and abstract its fluids, but not so easy to restore them; and because there is much reason to fear that the lancet has been too often unsheathed, and has not returned innocent.

CONCLUSION.

WE have treated on inflammation, in purpose to show, that white swelling neither depends on a phlogistic, or “ a rheumatic disposition or *diathesis*, nor on plethora, nor over-excitement, nor on any thing comprehended in these doctrines. We have seen, that these doctrines are not strictly applicable even to inflammation itself; that it does not depend on over-excitement or increased action, because increased action cannot exist independently of the immediate operation of a powerful stimulus, or the stimulus of some local disease; that the highest degree of excitement constitutes health; that this degree of excitement gives the highest degree of resistance to the exciting causes of inflammation; that the body is the more obnoxious to the influence of these causes, in proportion as it recedes from health, or is deranged or debilitated; and that, in short, in-

flammation differs not, in this respect, from any other disease.

Now we may suppose an individual in a state of perfect health, in a state of the highest degree of vigour or excitement; we may suppose him subjected to the operations of temperature causing inflammation; but to produce this effect, it must operate with a high degree of force; and having thus operated, it will produce inflammation; and this inflammation will produce irritation, and consequent over-excitement, and increased action. Thus is over-excitement and increased action fully established; but they did not exist previous to the inflammation; for, previous to this, there was nothing but that degree of excitement which constitutes health.

AGAIN, we may suppose a body of another description, deranged or debilitated, with a comparatively low degree of excitement: in this body, a much lower degree of force in

the operations of temperature will produce inflammation; and once produced, the symptoms will be very different from those in the vigorous constitution. This body was deranged or debilitated previous to the inflammation, and therefore can show no other symptoms but those of debility. The action of the sanguiferous system will be accelerated, but not, properly speaking, increased. There will be febrile and typhoid symptoms, and every symptom of debility.

IF the inflammation of white swelling can be likened to any thing, it is to this kind of inflammation; to inflammation of the most passive kind; to chronic, rather than to acute rheumatism. But it will liken unto no disease whatever; to no kind of rheumatism, nor no kind of inflammation. The inflammation of white swelling is an inflammation *sui generis*; it is produced, and modified, by an internal cause, by a scrophulous diathesis; and must therefore be different from any inflammation arising from an external cause:

yet it is surely more like unto passive than to active inflammation, more like unto passive than to acute rheumatism; though the analogy to either, and more especially to the latter, is surely very far distant.

It is unlike active inflammation, because it is not connected with high excitement and increased action, and for the same reason it is unlike acute rheumatism; it is more like passive inflammation and chronic rheumatism, because, like these diseases, it is connected with a low excitement and languid action. In these respects it may be compared to passive inflammation and chronic rheumatism; though, in other respects, there is no sort of analogy.

In as far, then, as low excitement and languid action are concerned, there is some analogy between white swelling and passive inflammation and chronic rheumatism. It is like passive inflammation also, inasmuch as it has a strong tendency to terminate in suppu-

ration; but in this respect it differs totally from every species of rheumatism.

IT was an egregious blunder to confound acute rheumatism with white swelling, and to make *young people plethoric, with a rheumatic disposition, or a phlogistic diathesis*. Were it possible that plethora could exist, the subjects of white swelling are not the subjects of plethora. White swelling generally takes place in young people; and they are so young, that the growth of their bodies is far from being completed. The new matter received into their bodies is fully employed in their growth; there is nothing to spare to overflow their mass of fluids; and they have that sort of debility which is attendant on growth. Youth and old age are surely not the periods of plethora. In the former period, the body needs a great supply to its growth; and in the latter, to its waste. The prime and vigour of life is the period of plethora; yet neither at this period is there any satisfactory evidence that it exists. The doctrine

of plethora is as vague and as hypothetical as the doctrine of a phlogistic diathesis. Yet have they gone hand in hand, as clear, fixed, and established rules of practice, to the no small effusion of human blood.

BUT while the subjects of white swelling are without plethora, and without a phlogistic diathesis, they have the debility of growth; and, added to this, they have hereditary or inherent disease. The actions of their bodies are displayed in a manner languid and morbid: instead of their systems being perfectly renewed, and growing up to health, maturity, and vigour, and the different organs performing their functions as they ought, scrophulous affections take place of various kinds, and among the rest white swelling. This is the great and fundamental source of white swelling; it is an actual scrophulous diathesis, a hereditary disease; it is displayed by languid and morbid actions and imperfect functions; aided by the debility of growth, it gives rise to white swelling. These causes

of themselves are sufficient to produce this disease, and do most frequently produce it. They seldom require the aid of other causes; and when other causes do operate, they all tend to a somewhat similar effect; they all tend to the production of derangement or debility: and thus is white swelling produced, either by the scrophulous diathesis, and the debility of growth simply; or by the help of other causes, which induce a still greater depravation of the scrophulous body, and throw it into the state of actual disease.

IN all this there is no plethora, nor no phlogistic diathesis. Plethora, and over-excitement, are unfounded in the nature of things; they are incompatible with the scrophulous diathesis; they are incompatible with the debility of growth; they are incompatible with all the causes which tend to the production of white swelling. In the scrophulous body, in the body with white swelling, there is nothing but languid and morbid actions and imperfect functions: the

symptoms of derangement and debility are many; there is not a single reason to suppose an opposite state of body; there is not a single reason, nor a single consideration, to support the practice of bleeding, and cupping, and scarifying, and leeching, and cooling laxatives, and a strict antiphlogistic course, both as to diet and every other circumstance; but every reason, and every consideration, to support and indicate a practice of directly opposite powers and effects.

DISSERTATION IV.

OF THE METHOD OF CURE WHICH SHOULD
BE EMPLOYED IN WHITE SWELLING.

THOUGH we had neither heard of a humoral pathology, nor of a doctrine of plethora, nor a phlogistic diathesis, yet we could learn something of the opinions which have been entertained concerning the nature of white swelling, from the method of cure which has been employed. We could learn, that it must have been considered as caused by a superabundance of the fluids, and an exuberance of health in the solids; by plethora, and over-excitement: for the fluids have been abstracted, and the solids debilitated;

both local and general bleedings, with other evacuations, have been employed ; a strict antiphlogistic course has been enjoined : to effect the cure of this disease, scarcely has any thing been left undone, that could impoverish or lessen the quantity of the fluids, or that could derange or debilitate the solids.

By this practice, we are fully informed of the opinions which have been held of the nature of this disease. It must have been considered as depending on plethora, and over-excitement, and increased action ; or else, what could be the intent and meaning of the practice ?

BUT were these doctrines well founded, were white swelling caused by plethora and over-excitement, the antiphlogistic method of cure could not fail to remove the disease ; it could not fail to impoverish the fluids, and reduce the excitement : Yet as certainly as it can produce these effects, as certainly has it not effected the cure of white swelling.

Now this want of success must be owing to one of two things ; either to the incurable nature of the disease itself, or to the method of cure being ill-contrived ; or perhaps it is, that this disease is not only of difficult cure, but that the method of cure which has been employed is ill-adapted to the effect.

THAT the cure of this disease is not easily effected, there is every reason to believe. Were it produced by the sole operation of external causes, like most other diseases, the case would be widely different. The operation of these causes might be prevented, and powers capable of doing away their effects might be employed to its removal. But it does not depend simply on external causes ; it depends on an internal cause, or at least this cause gives the predisposition, or the form and nature of the disease.

ON this account, therefore, the cure of white swelling cannot be easily effected ; its cure must be more or less difficult in propor-

tion to the degree of original depravity ; in proportion to the degree of the scrophulous diathesis ; in proportion to the degree in which it is the effect of this diathesis, or the effect of external causes.

BUT in whatever degree the scrophulous diathesis may exist, it is to combat in the cure of the disease ; it is a primary and fundamental consideration ; it is to be considered whether we know any thing of its nature ; whether we know so much of it as to warrant any particular mode of practice ; or if we do not, we ought surely to proceed with diffidence and caution.

JUDGE, however, from what has been done for the cure of this disease, and the impression arises, that the nature of the scrophulous diathesis has been clearly and completely understood. We behold a most decided and active practice ; a practice that can do either much good or much harm. If it be right, it is greatly right ; if it be wrong, it is as great-

ly wrong ; it has no medium nor middle course.

BUT, to speak the truth, were the practice conducted according to our knowledge of the subject, we should perhaps proceed with somewhat more caution. . We should view the evidence on both sides of the question ; the evidence both for and against the antiphlogistic method of cure ; the evidences for this method of cure, and the evidences for one of a directly opposite nature, and proceed accordingly ; being not unmindful that experience has no share in the question ; that it cannot be urged in favour of the antiphlogistic method of cure.

LAYING experience therefore out of the question, we would ask what principle is there to support this practice ; to defend the practice of bleeding, and cupping, and scarifying, and leeching, and cooling laxatives, and a strict antiphlogistic course, both as to diet and every other circumstance ? Has the ex-

istence of a phlogistic state of the animal body been proved, or is it capable of proof? Does our knowledge of the nature of the scrophulous diathesis support the practice? Is it warranted by any one consideration regarding those causes which excite the phenomena of scrophula or white swelling? Is it supported by a just or proper consideration of these phenomena themselves? Is it defended by experience; or is it defended by any thing that can be thought or conceived?

IN this dilemma, therefore, what is to be done, or what ought to be done? Should we not sit quiet and do nothing? Should we not rather do nothing, than work destruction and mischief? than grope in the dark, without even a single plausible principle, or rule of practice, or the smallest glimpse of experience to guide our steps? Is it an easy matter, or of no consideration, to starve, and bleed, and cup, and scarify, and leech, and purge, right or wrong? If this practice, so important in its effects, cannot be clearly shown to be

right, it ought surely to be left undone. If we are ignorant, let us confess our ignorance ; if we know not which hand to turn us to, let us leave the sufferer to his desires and aversions, to the impulses and desires of nature, to the operations of a *vis medicatrix naturæ*, and be blameless.

BUT this disease is a most formidable disease ; it is a most excruciating and painful disease ; it destroys limbs, and it destroys life : on the old principles and practice, it has seldom or never been cured, and as seldom has a joint been brought to ankylose.

IT is high time, therefore, to make trial of another method of cure. This want of success by the antiphlogistic practice is sufficient to warrant the attempt : but there are other reasons to support a revolution in the cure of this disease.

THOUGH we know little of the nature of the scrophulous diathesis, yet this we know,

that it does not admit of plethora or over-excitement. Nay, on the contrary, we know, that “ the scrophulous habit seems to consist in laxness and debility, in an imperfect action of the arteries, in an imperfect secretion of the solids, and especially in an imperfect secretion of the bony matter ;” that the actions of the scrophulous body are displayed in a manner languid and morbid ; that the exciting causes of scrophula, whether they operate in the earlier or more advanced periods of life, are all of a deranging or debilitating nature ; that all the actual phenomena of scrophula mark a state of derangement or debility ; and, finally, there is some experience, that the most effectual mode of removing these phenomena, is by the use of every power that can enrich the fluids and invigorate the solids ; that can enrich and increase the fluids, rather than impoverish or diminish them ; that can increase the excitement and activity of the solids, rather than render them more languid and more morbid.

VIEW then the evidence on both sides of the question ; the evidence for the antiphlogistic method, and the evidence for a contrary method of cure. Consider that the doctrines of plethora, of a phlogistic diathesis, and of over-excitement, are purely hypothetical ; that they are hypothetical when applied to the most healthful and vigorous body, and far more so to the predisposed and scrophulous habit : throw former impressions and prejudice away, and view the subject as if from the beginning ; view the scrophulous body as it is in itself, clogged, as it were, with predisposition or hereditary disease ; consider the phenomena of the scrophulous habit ; consider the nature of the exciting causes of scrophula, and what must be their effects ; and then judge whether the evidence in support of the antiphlogistic method, or the evidence in support of an opposite method of cure, are the stronger.

SUPPOSE the scrophulous diathesis out of the question ; suppose that white swelling

were the sole effect of external causes ; and suppose these causes deranging or debilitating in their nature and effects—is it common sense that powers of a similar nature should be employed to remove these effects ? But there is no supposition in the case ; the exciting causes of white swelling, and every form of scrophula, are all deranging or debilitating in their nature and effects ; and to increase these effects, and to render them of more difficult removal, there is the scrophulous diathesis. So much the more then is the antiphlogistic method of cure contra-indicated.

It is this diathesis, this hereditary disposition, that renders the disease of difficult cure ; for surely it is not easy, if at all possible, to change the original conformation of the animal body. Yet on this subject we cannot speak with precision. We know not the extent of Nature's powers, nor what they will do when properly assisted. Scrophulous tumours have been discussed ; scrophulous ulcers have healed ; and scrophulous joints have

anchylosed. But these things happen comparatively so rarely, that we are driven to one of two conclusions; either that the nature of the disease renders it of difficult cure, or that the method of cure is ill adapted to the effect. One or other of these things must operate; and surely the former has no inconsiderable share in the matter. Yet we can form no estimate of its share; for as surely the method of cure which has been employed is ill fitted, either to the alleviation or removal of the disease.

If there be any thing in the doctrine which we have endeavoured to establish; if scrophula or white swelling does not depend on plethora and a phlogistic diathesis, but on derangement or debility displayed in languid and morbid action, most unquestionably “considerable advantages” cannot be “obtained by a due attention to a proper anti-phlogistic course*.” This is self-obvious, and

* Vide the Treatise, p. 417.

requires no demonstration. It requires no demonstration that *a due attention to a proper antiphlogistic course* will derange and debilitate the most vigorous and healthful body; and how much more a body diseased, labouring under the scrophulous diathesis, and over this the effects of many deranging and debilitating powers?

YET we are taught that “the first remedy which, with this view, should be put in practice, is blood-letting; but instead of general evacuations from the arm or elsewhere, it proves always more effectual to take the blood immediately from the part affected. Cupping and scarifying is here a principal remedy. The instrument should be applied to each side of the diseased joint; on each side of the rotula, for instance, when the knee is the part affected, and at least eight or ten ounces of blood discharged; and this is to be repeated at proper intervals, once, twice, or oftener, according to the violence of the

symptoms and state of the patient's strength at the time *."

IT is well that the "state of the patient's strength" is at all considered; it is well that "*general evacuations*" are not advised "*from the arm or elsewhere.*" Yet from where it is advised, it will perhaps make little difference as to its real or ultimate effect: "Ten ounces of blood discharged from each side of the rotula, for instance," may be as effectual, perhaps, in debilitating the patient, as "ten ounces from the arm or elsewhere;" and more especially if it "be repeated at proper intervals, *once, twice*, or oftener, according to the violence of the symptoms and state of the patient's strength at the time."

Now these are just the very two considerations, the patient's strength and the violence of the symptoms, to forbid either general or local bleeding, or any other part of a

* Vide the Treatise, p. 417, 418.

debilitating or antiphlogistic course of practice. The state of the patient's strength will at no time admit the loss of one drop of blood; and therefore in proportion to the quantity abstracted the patient must be proportionally injured. The young and the scrophulous habit is not the habit for bleeding; and if deranging and debilitating powers have operated as exciting causes, it is still more contra-indicated. Scrophula and youth are incompatible with vigorous and active solids, and plenitude of fluids; and therefore on this ground alone the practice of bleeding in any form or in any quantity, is totally inadmissible.

It is in proportion to the degree of the scrophulous diathesis, and in proportion to the degree in which deranging or debilitating powers have operated, that the symptoms are more or less violent. It must be so; for these powers, and the scrophulous diathesis, are the primary and fundamental causes of the disease; and it is impossible that they

can give strength or high excitement. The symptoms therefore must be more or less violent in proportion to the degree in which these causes operate, or have operated; and there is not one of the symptoms properly considered that portend a state of strength, but the very contrary; the patient's strength is far below the strength of health, and every symptom shows it. He is incapable of exertion, and easily fatigued. While the health and strength of his neighbours is improved by exercise, his is destroyed. Languor, and hectic, and acute pain, and sleepless nights, succeed to all his exertions. His appetite is puny, and the force of every function is diminished. Thus the disease begins, and thus it ends: it begins with every symptom of debility; these symptoms gradually increase, showing a gradual increase of the cause by which they are produced: it does not begin in strength and end in weakness; it begins in weakness, and this weakness gradually increases, till "the patient is reduced to little more than skin and bone;" nay, even

till death, “if the member is not either amputated, or if a cure of the disorder is not in one way or another effected.”

BUT these are the points at issue, to prevent either the necessity of amputation, or the death of the patient. Now every one who knows any thing of the matter will admit, that if these consequences can be prevented, the commencement of the disease is the time to make the attempt. This is the time at least in which there is the greatest chance of success; and beginning the cure at this period, the chance of success will be according as it is ill or well directed.

IF, then, the disease has nothing of strength in it, but every symptom of derangement or weakness, is it right to begin the cure with bleeding, and purging, and “a strict antiphlogistic course both as to diet and every other circumstance?” Would any one think of this method of cure, after “the patient is reduced to little more than skin and bone?”

Common sense would say, surely this patient requires every kind of support that can be thought of or devised. But what is the difference in the state of the patient at this period, and at the commencement of the disease? There is no difference but only in degree; at least there is no difference to establish a different method of cure; the symptoms are only more obvious, and show higher degrees of derangement and debility; the patient has only passed from one degree of derangement and weakness to a higher degree of the same state. The method of cure therefore ought to be the same at the commencement as at the more advanced stages of the disease; and surely no one would now think of bleeding, and purging, and starvation, when "the patient is reduced to little more than skin and bone."

THIS kind of practice does nothing else than hurries on the fatal event. It deranges still more the already deranged and scrophulous body; it accelerates the progress

of every symptom, and renders them more and more violent; it tends to the production of other forms of scrophula, as phthisis pulmonalis; it stops the possibility of preventing suppuration in the diseased joint; it interrupts and destroys the powers and operations of nature, in bringing the joint to ankylose; and it ensures the necessity of amputation, or accelerates the death of the patient. It is not therefore "according to the violence of the symptoms" that this practice ought to be employed; it is rather "according to the violence of the symptoms" that it ought not to be employed.

BUT while antiphlogistic regimen and antiphlogistic practice weaken the energies of the scrophulous body, and hasten suppuration in the diseased joint, and stop the ankylosing process, the same effects are produced by some applications that are made to the joint itself. These are the effects of "eight or ten ounces of blood discharged once, twice, or oftener," even though "repeated at pro-

per intervals ;” for the scrophulous body, labouring under white swelling, is not apt to form new fluids, and the *ingesta* are in small proportion. But the evil does not rest here ; by this discharge of blood, the diseased joint is farther deranged, its morbid condition is increased, the suppurative stage is hastened on apace, and the total destruction of the joint is made certain.

THIS may be the worst view of the subject ; yet perhaps the picture is not overdrawn : For what can be the principle on which this practice is founded ? and what are the effects of drawing blood from this diseased joint ? The principle is the violence of the pain ; and pain has been always understood to indicate a state of high or active inflammation. Hence the practice of bleeding, and cupping, and scarifying, and leeching, in the case of all pains, without the least regard to the general state of the system or the cause by which they are produced. But of all inflammations, scrophulous inflamma-

tion is perhaps the very last to suit this practice ; and though in scrophulous inflammation of the eyes, scarifications have been of use, yet this is on another principle than the mere abstraction of blood ; and this principle will not apply to white swelling, nor to any indolent scrophulous tumour.

THIS is the nature of the scrophulous inflammation ; it is the most passive of all inflammations ; it has a greater tendency to terminate in suppuration. What tumour, or what abscess, so indolent as the scrophulous tumour or abscess ? It begins in languid or torpid action ; it is slow and tedious in its progress ; and at length it dissolves in matter, as it were, from the mere want of action. It is this indolent and torpid state of the scrophulous tumour that renders it so little susceptible of being roused or excited into action. It is therefore this torpor, or want of action in itself, that renders it so little susceptible of resolution. It has the strongest tendency towards suppuration.

THIS is the exact description of every scrophulous tumour; it is the exact description of white swelling of the joints; for this is to all intents and purposes a scrophulous tumour. It has its origin in languid or torpid action; it is indolent and torpid in its very nature and essence; it is more easy to accelerate than retard its progress; bones, cartilages, and ligaments, are disorganized, and form matter from their deranged and indolent state, from the mere want of action.

IN all this there is nothing like active inflammation; for this inflammation is obedient to the action of every curative power, and is greatly susceptible of resolution. If it suppurates, it heals kindly; there is a speedy reproduction of the lost substance. If the inflammation of scrophula or white swelling can be likened unto any inflammation, it is to that of the most passive kind; for this inflammation is seldom and most difficultly resolved; it generally terminates in suppuration or in gangrene; the dead parts are flow-

ly separated ; the ulcer discharges a thin ill digested matter ; and the lost substance is slowly reproduced.

BUT there is one point which must not be forgotten ; and that is, the violence of the pain in white swelling. What must it be when it has determined the necessity of amputation ? when even patients themselves “ frequently prefer immediate amputation of the member ? ” It is indeed a most severe and excruciating pain. It has been taken as the measure of inflammation. In proportion as the pain has been excruciating, the inflammation has been supposed proportionally active, requiring the greater force of antiphlogistic remedies. But this is all a mistake ; the greater the pain, the greater is the inflammation passive, the greater is the derangement in the joint, and the nearer it is to destruction ; the greater are its actions morbid ; and the more difficult it is of being excited into healthful action ; requiring the greater force in the action of stimuli to alle-

viate or remove the disease, or to bring any relief to the miserable sufferer.

THE pathology of the pain, therefore, is just the very reverse of what has been supposed. It is the offspring of passive instead of active inflammation; it is the necessary effect of derangement, debility, and morbid action. It is not the offspring of active inflammation, because the deranged and scrophulous body does not nor cannot admit of this kind of inflammation.

WERE the pain of white swelling caused by active inflammation, it should be most severe at the very commencement of the disease, when the body is most vigorous, and before it is worn out with pain and morbid irritation. But the pain is seldom the first symptom; at least it is rather a dull than an acute pain, with a sense of general languor and weakness in the diseased limb. As the other symptoms increase, however, so also does the pain; as the body becomes worn

out and emaciated, as the force of every function is diminished, the pain becomes more and more severe; and it is only the bursting of abscesses, the removal of distension, and irritation, that brings any relief from this most acute and grievous pain.

Now were we to inquire into the nature of this subject, the progress and severity of the pain, we should find it in the nature of the affected parts; in the nature of bones, cartilages, and ligaments, and other parts concerned in the œconomy of the joint: for these parts have a dull excitability; they are insensible in the healthful state; though acted on by the most powerful stimuli, there is no sensation of pain; when compared to the more living parts of the system, they are dead and inorganised matter; yet they also have their diseases, and these diseases are more desperate, more obstinate, and more severe, than the diseases of the more feeling and sensible parts: they are slow in assuming the morbid state; but when once established,

it is as slow in being removed; and their diseases are the diseases of anguish and cruel pain.

It were needless to bring proof that these parts are little endowed with sensibility; that they are slow in becoming diseased, and as slow in regaining the healthful state; and that by disease their feeling and communication of pain is evolved in the highest degree. The surgeon sees their want of sensibility in many of his operations; it is seen in the accidents of almost every day; it is seen in experiment, in the application of chemical and mechanical stimuli; and their extreme pain and tenacity of disease is seen and felt in their diseases, and in no one more so than in white swelling of the joints.

THE insensibility of bones, ligaments, tendons, &c. in the healthful state; their extreme sensibility and pain in the state of disease, and their slowness, first in attaining the height of disease, and then in regaining

the healthful state, are fixed and established facts; though perhaps neither these facts themselves, nor the pathology of the diseases of these parts, have gained sufficient attention.

BUT in allusion to our present subject, it is only necessary to observe, that the bones, like the more feeling and sensible parts, are subject to inflammation, suppuration, and death; that the ligaments, bursæ, &c. are subject to inflammation, suppuration, and thickening, and to morbid secretion and effusion; and that inflammation in all these parts is often produced by similar causes, and on similar principles, to the inflammation of the more living and sensible parts of the system.

IT is produced by the action of chemical and mechanical stimuli; yet still these stimuli do not produce an immediate effect. On their first application there is little or no pain. The slowness with which the less

feeling parts of the system are brought into disease, would seem to correspond with their degree of insensibility: but at length the period of inflammation and pain does come, excruciating to a degree.

THUS is inflammation produced in the bones, ligaments, &c. by causes similar to those by which it is produced in the more feeling and sensible parts; and that it is produced on similar principles is perfectly clear. Chemical and mechanical stimuli derange and debilitate the more sensible parts of the system; render their feeling more exquisite, causing morbid and painful sensation. In like manner, these stimuli operate on bones, ligaments, &c. derange their structure, and raise their feeling and pain far above the feeling and pain of the more living and sensible parts.

PAIN, therefore, in the periosteum, bones, ligaments, &c. may be taken as the measure of inflammation, *i. e.* the greater the derange-

ment, the greater the inflammation and pain : But it is absurd to conceive that the injured part is under a state of high excitement or increased action, requiring the greater force of antiphlogistic remedies, or deranging and debilitating powers, to resolve the inflammation and relieve the pain. For this, as well as every other case of inflammation, is caused by the action of deranging or debilitating powers ; they derange the parts on which they operate ; inflammation, increased sensibility, irritation, and pain, ensue ; and the most powerful remedies, in removing these morbid effects, are stimulants and astringents ; which (as Mr Benjamin Bell emphatically observes), “ when the preparation is of a proper strength, is almost constantly an abatement of the different symptoms of pain and tension, at the same time that there is communicated an agreeable soothing sensation to the part *.”

* Vide the Treatise, p. 40.

THUS do we understand something of the pathology of the pain in white swelling. The bones and ligaments are peculiarly afflicted. They are insensible in the healthful state ; but their feeling is evolved by disease. Deranged and inflamed, they give the most acute torture and pain. That they are deranged, and greatly deranged, in white swelling, is indisputable, and they are under a certain kind of inflammation. But though the pain is most acute and tormenting, yet there is no increased action nor active inflammation : there is torpid action, and the most passive of all inflammations ; for it has the strongest tendency towards suppuration. The serophulous inflammation, and the serophulous tumour, wherever seated, whether in bones, ligaments, or glands, have nothing in them of an active nature.

ON these principles we object to antiphlogistic regimen and antiphlogistic practice ; we object to every power that can farther derange the serophulous body and the dis-

eased joint ; while we contend, that the proper method of cure is to support and strengthen the system by general remedies, and to excite action and absorption in the diseased joint by remedies of local application.

ON these principles we object, in a particular manner, to local bleeding, to cupping, and scarifying, and leeching ; for it has a most deranging and debilitating effect ; first in the diseased joint itself, and then in the system : it increases the pain, and it increases the swelling ; it hurries on the joint to suppuration and caries.

ALL this may appear odd to those who are accustomed to think otherwise ; to those who have been long in the habit of the practice ; and to those who can *discharge* “eight or ten ounces of blood” from around “the rotula, for instance,” because they are “accustomed to the practice *.” But to all such

* “ IN the ordinary way of discharging only an ounce

we would say, that this practice does actually increase the pain and the swelling, and hastens suppuration and the total destruction of the joint. These things we have seen, particularly in two cases; and so obviously that there could be no mistake. They were seen by others who had no prejudice, nor could have no theory to serve; nay, who might be prejudiced in favour of the practice, and, seeing a swelling, might think it natural and reasonable to take something out of it to diminish it; and reasoning thus, they reasoned no worse perhaps than some others. The patients were children of the same family; the one case was in the knee, and the other in the hip joint. Leeches were applied to the knee; and instead of having "very little or

or two of blood by this operation, it has, in general, very little or no influence; but, in the quantities mentioned, and which, by those accustomed to the practice, is commonly easily obtained, it most frequently is attended with very considerable effects." Vide the Treatise, p. 418.

no influence," their application was followed "with very considerable effects;" and these effects were, increase of pain and swelling strongly marked. Now the swelling was not "occasioned by the application of a considerable number of these animals *;" it was of a deeper dye, and carried with it an increasing and most excruciating pain. Notwithstanding, however, the leeches were "repeated at proper intervals once, twice, thrice," and with similar effects, till at length abscesses took place "in different parts of the swelling, and run in all different directions," they burst of themselves, but refused to heal. In a certain period the limb was amputated;

* "It must here be observed, that cupping is in these cases much superior to leeches; which is not only a more tedious method of getting the same quantity of blood, but the swelling occasioned by the application of any considerable number of these animals proves frequently very troublesome; and, what is often of worse consequences, gives sometimes an interruption, for a time, to the use of other remedies." Vide the Treatise, p. 418, 419.

but the constitution was in no state to admit of adhesion; the stump opened, and the bone projected; the patient, a beautiful girl, died under wasting, and hectic, and consumption of the lungs.

Here much

THIS case might have stood as a warning against bleeding, leeching, cupping, or scari-fying: But it profited not; for the hip case underwent the same treatment; and the night after the application of the leeches was the first sleepless night that the patient experienced. Throughout that night she cried with bitter anguish, and could find no place of rest. Here also was the same practice repeated, and with similar effects. At length abscesses were formed; and for years has this girl had many sinuses discharging matter from about the joint, old orifices healing, and new ones opening. But now there is hope that this joint may ankylose; because this patient has got over her course of antiphlogistic practice; her constitution is now well sup-

ported ; and because this joint is beyond the reach of the knife. *nonsense*

HERE, then, are two striking examples in condemnation of local bleeding : and they were striking indeed ; for in both cases, and soon after the leeching, the swelling and pain were unequivocally and most obviously increased. Neither let them be regarded as solitary examples ; for surely true experience and observation might point out a number more than sufficient to establish the hurtful and destructive tendency of this practice. Nor let it be contended that it hath either cured the disease or stopped its progress ; for on this score we can appeal to extensive experience and great authority itself. And this authority says, that “ gentle cooling laxatives, at proper intervals, are here of use too ; and the patient should, in every respect, be kept upon a strict antiphlogistic course, both as to diet and every other circumstance : from a due attention to which, with a continuance of the topical treatment already recommend-

ed, I have frequently observed very considerable advantages, more indeed than from any other remedies I ever saw used in this complaint.

“It is in the first stages only, however, of the disease, that such a course can probably be of much service ; and in such, I am, from experience, convinced, that it has frequently been a means of curing disorders, which otherwise would probably have proceeded to the last stages of white swellings.”

BUT mark—“The original inflammatory affection being once over, these sort of drains” (bleedings and issues) “seem to have little or no influence ; and ought not then to be longer persisted in, as tending to prevent the use of other remedies, which, in an advanced state of the disease, prove commonly more efficacious *.”

* Vide the Treatise, p. 420,

Now this is the whole amount of our author's experience : the disease is said to be altogether an "inflammatory affection ;" it is held to consist in active inflammation, in " an *inflammatory* or *rheumatic* disposition or *diathesis*." " The original inflammatory affection being once over" therefore, the inflammation is resolved, and the disease is cured. Surely "drains ought not then to be longer persisted in ;" they have done their work, and have nothing more to do. Now, after all this, how does it happen that the disease, in any one instance, gets into " an advanced state," requiring " the use of other remedies, which prove commonly more efficacious ?"

THERE must be something wrong about the drains ; for in spite of them the disease goes on in its progress. This is the result of our author's experience ; and in this respect he does not stand singular ; for surely there are not many cases on record where the disease has been cured by "cupping-glasses, and

a small blister kept open with issue ointment*." The drains, therefore, ought to be closed up, or opened in a more efficacious manner; for their "influence" does not depend on the "discharge" by them "occasioned;" it depends on "almost a constant stimulus" being thus "kept up †:" yet this is a feeble stimulus, and not likely to do much good "in deep-seated inflammations," and the less so when alternated or anteceded by the abstraction of "eight or ten ounces of blood once, twice, or oftener."

* "UPON the anterior part of the joint, where the cupping-glasses have not been placed, a small blister should be directly applied; and the part kept open with issue ointment, till the wounds from the scarificator are so far healed, that a vesicatory may likewise be laid on one side of the joint; and so soon as that is nearly healed, the other side should be also blistered."

† "By thus alternately applying them, first to one side, and then to the other, almost a constant stimulus is kept up; which in deep-seated inflammations seems to have fully a greater influence than all the discharge occasioned by blisters." Vide the Treatise, p. 419.

THIS is a specimen of this method of cure ; blood is abstracted in large proportion ; yet “a constant stimulus is” to be “kept up.” But the disease goes on its progress, requiring “the use of other remedies, which prove commonly more efficacious.”

THIS is at once the principle on which white swelling is to be cured—a constant stimulus ought to be kept up ; the constitution ought to be preserved from decay, its vigour and energies supported and increased. But the greater force of the remedies ought to be directed to the diseased joint ; for this, though not the primary cause of all the constitutional mischief, yet comes in for an important share. The local affection being once established, it wears out the constitution by constant irritation and extreme pain. It is therefore a primary consideration in the alleviation or cure of the disease. If it can be kept under, as it were, the constitution will not suffer ; and if, again, the constitution can be preserved, it will re-act on the diseased

joint, and favour the operation of every remedy. The treatment of both ought to go hand in hand. A constant stimulus should be kept up in the diseased joint to excite action and absorption, to prevent irritation and pain; the constitution should be preserved by a proper use of the ordinary powers of life, and by a moderate and judicious use of certain artificial stimuli. Promptitude in the cure is essentially requisite. On the first dawnings of disease, or so soon as the "practitioner is called in," the proper remedies ought to be put in force. He is not to waste time, or his patient's strength, by supposed antiphlogistic remedies, or any deranging or debilitating power, whether locally or generally applied. He has no phlogistic diathesis, nor no increased action, to combat. He has to combat a languid constitution, and a highly deranged and indolent joint. He has the same principle, and the same method of cure, to pursue at the first as at the last; and the sooner put in force, the greater chance of success. He has no time, nor has the patient

one drop of blood, nor one degree of strength, to lose.

THUS we are led to consider more particularly, and in detail, the method of cure which should be employed in white swelling : and this subject is naturally divided into two branches ; *first*, the constitutional treatment ; and, *secondly*, the treatment of the local affection or the diseased joint.

WITH regard to the *first* point, the constitutional treatment, there is no fixed rule, farther than that the patient be supported by a due application of the ordinary powers of life, and certain artificial stimuli. If animal food cannot be taken in the solid, it ought to be given in the fluid state, in the form of soups and jellies. Of the use of alcohol, either in the form of wine, in porter, in ale, or in water, there is this rule, that it be given in moderate proportion. If its action is too powerful, it will give weakness rather than strength. It can of itself afford no new mat-

ter to the system; and therefore it can only be useful as a cordial, or as gently exciting the chylopoetic viscera to the preparation and absorption of chyle.

IT is an object, therefore, of the first importance to preserve and support the functions of the stomach and bowels; to attend to the minutiae of the dietetic part of the cure; to administer those substances that are most nutritious—for they are in general most easily digested. These things ought to be minutely considered, that new matter may be supplied to the growth and waste of the body, and to the preservation and increase of its strength. On the functions of the stomach and bowels the whole support of the system depends; and therefore the preservation of these functions is an object of the very first consideration and importance.

BUT while this is an object of the first importance, it is difficult to accomplish. The functions of the stomach and bowels are ge-

nerally imperfect. In the more early periods of the disease there is costiveness, and in the more advanced periods diarrhœa. But though these are apparently opposite effects, yet they arise from the same cause; they arise from imperfect function, from a sort of debility in the stomach and bowels. They must therefore be increased by every power that can produce a greater degree of derangement or debility; and therefore by laxatives of every description: For these powers must derange or debilitate the stomach and bowels, and in a degree proportioned to the degree in which they operate, proportioned to the degree in which they cause evacuation. Nor is this all; for while they operate they must interrupt or disturb the digestive process, and cut off the source of nourishment, as it were, from the system.

Now, for what reason, or on what principle, are laxatives administered? If they are administered to remove a phlogistic diathesis, there is no such thing to remove: if

they are given to remove costiveness, it is a bad reason; for surely laxatives will not increase the tone or vigour of the stomach and bowels, and render their functions more vigorous or more perfect. Nay, that they produce a directly opposite effect is clear; for every repetition of the laxative requires an increased dose to produce a laxative effect. If the scrophulous body, labouring under white swelling, has every function languid and imperfect, how are we to expect a contrary state of the stomach and bowels? how can we expect that the bowels should be regular when every other function is irregular? Is it fair or right to force this function, because it is somewhat more in our power than any of the other functions? If the appetite is bad, how can we expect a regular discharge from the bowels? Is it not reasonable to conclude, that the appetite must be improved before the economy of the bowels can become natural? Can any function of the body be healthful or natural when all the other functions are in a morbid state? But what is the

result of this false pathology and this bad practice? To remove costiveness, laxatives are administered; every repetition of the laxative requires an increased dose to produce a laxative effect; every repetition of the laxative is followed by a greater debility of the stomach and bowels, by a greater want of appetite: the system does not nor cannot escape; the strength decays; every function becomes more imperfect and more morbid; hectic takes place; and the bowels pass from one sort of debility to another; they pass from that sort of debility which constitutes costiveness to that which constitutes diarrhœa.

THE frequent repetition of laxatives, therefore, is a bad practice. They cannot fail to diminish the tone of the stomach and bowels; and therefore they must also diminish the appetite: they impoverish, derange, and debilitate the system. These are the natural and necessary effects of laxatives frequently repeated; and we see no reason to compromise the matter. Should it be contended, that

they render the system more susceptible to the action of all stimuli, and thereby tend to the production of new actions, and cause the absorption of diseased and indurated parts; we answer, That this is risking a positive evil for a negative good; their power of doing mischief is certain, while their power of doing good is doubtful: It is certain that they can derange and debilitate the stomach and bowels, and the whole body; while it is truly uncertain that they can give the scrophulous body renewed or increased susceptibility of action, either to the ordinary powers of life or to any other stimuli.

IN the cure of white swelling, therefore, the use of laxatives, or the practice of purging, should be extremely modified, if not altogether laid aside. There is much against the practice, and little or nothing in its favour. It is absurd to expect a perfect or regular function in the bowels, with an imperfect function in the stomach. The egesta must be proportioned to the ingesta. No harm can

accrue from costiveness, but much from purging and diarrhœa. The functions of the stomach and bowels should be gently excited by the ordinary powers of life and some other stimuli, but by no power that can either directly or indirectly derange them, and least of all by repeated laxatives or purging; for this is a power that is first destructive to the stomach and bowels themselves, and then to the whole body.

THE next point to be considered in the constitutional treatment of the patient is the management of temperature: And this is a point of considerable importance; for too much heat must prove hurtful by its excessive, and too low a temperature by its deficient, action. In either case the constitution must be hurt; and therefore the management of temperature is a thing not to be done at random. Did we know the exact degree of temperature most conducive to health, we should arrive at some fixed principle as to the degree of its application. But this we know

not, and therefore we must abide by general rules; and they are these:—flannel should be worn next the skin, and the temperature at all times regulated to the effect of producing agreeable sensation.

IT is in this manner, then, that the application of temperature ought to be regulated: in general, it may be proper to keep it as near the healthful point as can be supposed. But at times it may also be proper to raise it somewhat higher, as by the warm bath; for the stimulus of heat to a certain extent is necessary to preserve the system, and to act in concert with other powers in raising and increasing its energies.

IN the treatment of white swelling and other scrophulous affections, no part of the practice has been more abused perhaps than the management of temperature. At one time the cold and at another time the warm bath has been employed; at one time the body has been starved and debilitated with

cold, and at another time stimulated with heat. There is a strange confusion in this practice, which requires to be set to rights.

A CERTAIN degree of external temperature is essential to the life and health of the body. Its increase or diminution, to a certain extent above or below the healthful point, produces death; and its increase or diminution, within a more limited range of scale, produces disease. These are established facts; they are seen throughout all animal and vegetable nature. In short, temperature must produce hurtful effects in proportion as the surrounding substances abstract either in too high or too low a degree the caloric from the system. In the former case, the system must be hurt by the deficient, and in the latter, by the excessive action of heat.

THE influence of temperature, however, and its effects upon the body, are in some measure relative; for the same variations of temperature does not hurt two individuals,

nor the same individual, at different times. Its effects are modified by a variety' of circumstances; by the habits of the individual with regard to temperature; by the degree in which it is above or below the healthful point; by the length of time in which the individual is subjected to its undue action; by the age of the body, by its strength or weakness, by health, and by disease.

BUT in the midst of all these considerations, it is to be observed, that in the warm bath, generally speaking, the temperature is raised above the healthful point, and in the cold bath it is reduced below it. The warm bath therefore is the increased, and the cold bath the diminished action of the same stimulus. In this manner temperature operates as opposite powers with regard to the living body. The warm bath is an exciting, and the cold bath a directly debilitating power.

It is impossible to understand the doctrine of the tonic power of cold; and the very

language concerning cold bathing, if rightly understood, condemns it. The patient is told, that if he feels a warm glow on coming out of the bath it will do him good ; but if the glow does not immediately take place, if he remains cold and chilly, it will do him harm. The latter assertion is true, and the former false. If he remains cold and chilly, with other symptoms of debility, it is a positive proof that the bath does him harm ; but because the glow takes place, it is no positive proof that it does him good. If his body be comparatively strong and vigorous, if he be not much debilitated, he can bear the abstraction of heat ; on coming out of the bath, re-action, as it has been termed, immediately takes place ; the lost heat is soon reproduced ; and on putting on his clothes, a genial glow is diffused over his whole body : But if he be considerably deranged or debilitated, with every function languid and feeble, by the abstraction or deficient action of heat he is farther debilitated ; re-action does not take place ; the lost heat is slowly reprodu-

ced; he remains for a considerable period cold and chilly, with many other symptoms of strongly marked debility. The glow therefore is no positive proof of good; it is only a proof that the body has suffered no harm.

IN this reasoning there can be no mistake; for it is indisputable, that the too great abstraction or deficient action of heat must prove hurtful; it must produce debility in any body, even the most healthful. Starvation, as to food, produces weakness; as certainly starvation, as to cold, does the same thing. How then is it possible to conceive or understand the tonic power of cold bathing? If indeed the body be exhausted by the too powerful action of heat, the strength may be renewed by lowering its action. It is on this principle that the body feels stronger after the cold bath in a warm summer's day; it is on this principle that the vigour, excitability, and activity of plants is renewed by the cold and damp of the night,

after suffering the scorching rays of the sun ; it is on this principle also that the strength of the body is improved by lowering the diet and other stimuli in those who are overfed, and who indulge too freely in the use of these stimuli. When the ordinary powers of life operate too forcibly, they produce weakness ; when they are reduced to a more proportionate action, the strength of the body increases ; and when again they operate deficiently, debility follows. Thus cold deranges or debilitates both animals and vegetables ; and in proportion as the body is deranged or debilitated, it is the less able to bear, or is the more hurt by, the abstraction or deficient action of heat.

THE cold bath has the same temperature for all who plunge into it ; for the strong, the weak, and the weakest ; for the young, the old, and the middle aged ; for the diseased, and for the healthful. The healthful man passes from it unhurt ; he covers his body, and feels the instant glow ; he feels a sort of

temporary invigoration, and more especially if he has been previously subjected to a considerably high temperature. But the diseased and feeble man has none of these feelings. His feelings are of a very different kind. He has neither the glow nor the sense of invigoration; he has shiverings, and a sense of cold; he has headach and hectic; the heart and arteries are unable to propel the blood to the extreme parts; his countenance is pale, and his hands and feet are benumbed and torpid; his whole surface is shrunk and shrivelled; and often these symptoms are not removed till he has got rest, and sleep, and the warmth of a bed. These symptoms take place, in a higher or lower degree, according to the length of time he remains in the bath, or according to his strength or weakness. They are symptoms of great debility. The cold bath, therefore, is not the thing for the diseased and feeble man. Nay, perhaps, there is not a more sure mode of increasing debility, than a strict and steady

course of cold-bathing. This is a true doctrine, however heterodox.

THE cold bath has been long and much employed in white swelling, as well as in most other scrophulous affections. Sea-bathing has been regarded as a sovereign remedy ; yet hath it not stood the test of experience. There has been more fashion, and more prejudice in the practice, than real benefit. It is condemned by principle. Had accurate observations been made long ere now, it would have been condemned by experience.

“ I MUST confess,” says Dr Hamilton, “ that I have my doubts as to the sea-water’s possessing powers in a superior degree to any other medicines in the scrophula ; nor do I think that it merits the virtues given it by Ruffel and Speed. My reasons are the following, however heterodox they may appear ; but truth is my guide. .

“ I HAVE long lived in a sea-port town of great trade, and the haven, from the town to the opposite side is at least half a mile wide. The distance from the town to the mouth of the river Ouze (which forms the haven), where it opens into Lynn Deep, an extensive inlet from the German ocean, is about two miles and a half. A large body of sea-water flows from this inlet up the haven, many miles above the town, twice in twenty-four hours; and with the tide we may suppose a very large share of sea-air; and during the summer months sea-bathing is constantly used, when the time of high-water will admit of it, by men of all descriptions; and many of the boys are seldom out of the water in the day-time, except at school hours, all summer. Yet it is no less strange than true, there are no where more distressed victims to the scrophula to be met with than at Lynn! And they are as frequently to be met with amongst the lower orders of the inhabitants, who are used to the water daily, as in the other ranks of life whose business has no connection with

it. And in no inland town within my knowledge, which extends thirty miles around Lynn, did I ever see so bad cases of this disease as in this town, in a course of more than forty years practice.

“ The inference to be drawn from these remarks is, that if sea-water and sea-air were such specifics, surely the scrophula would be far less formidable at Lynn than in any of the inland towns; but it is a melancholy truth that it is not so! And from long observation I am rather inclined to think that it is really more severe and distressing*.”

THE matter, therefore, is now brought to issue. The practice of cold bathing is condemned by principle; it is unsupported by experience. The too great abstraction, or deficient action of temperature, must debilitate the living body. In the cure of scro-

* Vide Observations on Scrophulous Affections, &c. by Robert Hamilton, M. D. p. 159, 160.

phulous affections it has failed ; at least, there is no great testimony in its favour ; and but for prejudice and fashion, there would have been less. Rather than in any of the inland towns, in Lynn the scrophula is really more severe and distressing. In white swelling, it deranges the young and the scrophulous body ; it induces many symptoms of debility ; it hastens the approach of hectic, and sometimes consumption of the lungs ; it increases every disagreeable and painful sensation.

SUCH effects, however, do not follow the use of the warm bath. It is a power which, if rightly managed, may surely be useful in white swelling, and every scrophulous affection. It has been useful, and greatly useful, both in its general and local application. It has both principle and experience in its support.

“ WITHOUT giving much credit,” says Mr Ford, “ to the mineral impregnation of the Bath waters, as materially useful in this com-

plaint, I had conceived that the benefit, which Dr Charlton's patients received, might have been just as well derived, merely from an immersion in common warm water. Accordingly, I recommended warm bathing, in common water, in several cases of the early stage of the disease of the hip-joint, and I generally found that my patients were relieved from some of the most painful symptoms, but that the relief was not permanent. Nevertheless, I still am of opinion, that the warm bath ought not to be altogether rejected; it does not much interfere with the use of topical remedies, more especially that of bleeding by leeches; and it might at all times be adopted with considerable advantage, previous to the application of blisters, or of the caustic."

DR OLIVER observes, "that, when the case is recent, and the patient young, our waters," (the Bath waters) "frequently effect a cure. . . To which I must add, that, when the disease has been of long standing,

they seldom do much service; and if the parts are much inflamed, but particularly if matter is formed, the use of them is highly injurious*.”

It may be true, “that when the disease has been of long standing, they seldom do much service.” The Bath waters may not have great power over such a confirmed and obstinate local affection. But attend for a moment to the other parts of the practice; and it is matter of surprise that they effected a cure in any one instance. “Our usual method of treating such cases is as follows: We do every thing we can to prevent inflammation, or if it exists, to remove it. We depend more on the external than on the internal use of the waters. And such patients are usually restrained from drinking them, till the disease begins to give way; and even when they are prescribed in small quantity, and are sometimes softened with milk, or cooled with spirit of nitre. We frequently

* Charlton.

purge such patients, and with advantage. Some of them require, and are benefited by mercurial physic. Bleeding is not omitted. Cupping of the part is exceedingly serviceable, and emetics are often very useful. All these several evacuations are repeated during a course of bathing, as circumstances demand." Yet, wonderful! after all this, we find that the Bath waters "frequently effected a cure."

THE warm bath, therefore, is surely a remedy of great importance in the treatment of white swelling. What may we not expect from it, when it has frequently effected a cure, under the use of every power that can operate in opposition to itself, and that can impoverish, derange, and debilitate the system? When conjoined with powers that operate on a similar principle, or that can excite the actions of the system, and preserve and increase its vigour—we may reasonably expect that it will produce the most beneficial effects.

BUT the cure of white swelling is not to be expected from general treatment alone; local remedies are also necessary. The general and local treatment must go hand in hand as it were. Both the constitutional and local remedies should operate on somewhat similar principles; the system should be supported, and the affected part stimulated. It now remains that we should consider the local treatment of white swelling; the treatment previous to suppuration, and with a view to prevent it; the treatment if it takes place; and the treatment during the progress of the anchylosing process.

IN the general treatment of the patient we have this principle in view, that the system be preserved and supported by a due and well-ordered application of heat, air, and aliment, and its actions excited by the cautious use of certain artificial stimuli. This principle is also our guide in the local treatment. Action and absorption are to be excited in the affected part: But in the general and lo-

cal treatment there is this difference :—in the general treatment we may do harm by the too powerful action of stimuli ; this we can scarcely do in the local treatment. Here the most powerful and most diffusible are required ; and in the very first instance to these we should resort.

Of this description is heat. It is the most diffusible, and therefore the most powerful. The action of all other stimuli is superficial when compared to heat. It excites action and absorption. Its effects are most astonishing ; it diminishes the swelling and it diminishes the pain ; it brings relief from the most extreme torture ; it cannot be too highly extolled as a remedy in white swelling.

THE French surgeons are loud in its praises, and Le Dran details an instructive case. “ In the month of *January* 1725, a man, aged twenty-one years, felt an acute pain in his right groin, which subsisted in the same place during the space of a fortnight,

and then removed its situation. It varied often, affecting the thigh one time, and the *rotula* another, and then returned to its first point again. After he was bled and purged, they bathed the part with lavender water for above three weeks. The patient finding no relief, but, on the contrary, that his leg and thigh were emaciated, he declined the use of it, and put himself under the hands of several empirics for near three months, who robbed him of his money, without doing any service. These gentlemen (according to themselves) have infallible *nostrums*; but if they are so, it consists in draining the patients purses, who place a confidence in them. The last remedy he used was dry baths, such as are performed with spirit of wine; which being attended with the same success as the former, he applied himself to me.

“ WHEN I first saw him, he could not move his thigh without violent pains, nor suffer the least violence to be used in moving it: the superior part, to the spine of the *ilion*,

was so prodigiously swelled, as to be twice its ordinary magnitude. It was exceedingly distended, and as hard as a stone; the pain was very deep, but not augmented when the tumour was handled.

“ WHAT increased the bulk of the thigh to that extent in its superior part, was, probably, a large quantity of *lymphæ* inspissated and infiltrated in the interstices of the muscles; perhaps also that the *capsula*, embracing the articulation, was filled with *synovia*, as well as the *cavitas cotyloides*. The projection of the *trochanter major* externally, afforded some reason to believe that the thigh was luxated. (This sort of luxation is often seen from an internal cause, whereby the head of the *femur* is gradually thrust out of its cavity). The internal part of the thigh was emaciated to such a degree, that the bone seemed to be covered only by the skin, and might be embraced with one hand. The leg was emaciated also.

“ SEEING the inutility of all the remedies hitherto employed, I advised the patient to go to *Bourbon* to try the hot pump, which he had not yet attempted. He told me the impossibility there was of undertaking that journey, both because his circumstances could not afford it, neither would the excess of his pains suffer him to be moved. This gave me a thought of erecting a pump at my own house, which might, in some measure, answer the use of the hot mineral waters, and supply the want of them.

“ THE place being prepared with all necessary conveniences, I put the patient into *La Charité*, from whence I could remove him every day to my house. I ordered him to be twice bled and purged, and the 12th of *August*, began to pump upon him for the space of an hour; and when it was finished he went to bed, where the whole part affected was covered with bladders, half filled with hot water, to a supportable degree. These bladders were often renewed in the

space of two hours, and when they were removed, the part was suffered to perspire another hour, covered only with warm linen. Then the patient was brought back to La Charité, where the bladders were again renewed in the evening.

“ WHEN he had been pumped a few times, he began to lean upon his leg with less pain; but always by the assistance of crutches, and without any motion in the articulation.

“ THE part affected sweated considerably at each pumping, and appeared much softer after it. The patient had not used this method above a dozen times, but the swelling on the supperior part of the thigh began visibly to diminish. Then I ordered the motion of the articulation to be gently forced, notwithstanding the pain; though by degrees, and a little at a time; moreover, I purged him twice. These precautions, united with the pumping, dissolved the *sinovia*, so that the patient could move his thigh a little

without any assistance. In proportion as the tumour diminished, the leg and thigh grew more fleshy; in short, within the space of four months, during which he was pumped between forty and fifty times, suffering him now and then to repose a day or two, the distemper so far yielded, that the patient was able to walk very fast by the help of a cane only, feeling no more pain, and having this leg and thigh answerable to the other *."

IN the history of this case we have nothing to admire but the application of the warm water by the pump and by bladders. The pathology and all the other parts of the practice are bad: for there is surely no filling up of the *capsula* nor of the *cavitas cotyloides* with *sinovia*, nor no luxation of the head of the *femur*. But in all these parts there is a swelling or intumescence; and hence the swelling around the joint, the projection of the *trochanter major*; and hence also the length-

* Le Dran's Operations in Surgery.

ening of the limb in the hip disease. But suppose the capsule ready to burst with synovia, and the head of the femur thrust from its cavity—surely these things could not be remedied by bleedings and purgings. Had the patient been younger, by this practice he might have shared a worse fate. Neither can we admire the practice of forcing the “motion of the articulation.” It was well that the patient escaped without severe inflammation, ulceration, and caries, and in the end ankylosis, or even a worse consequence. In short, there is nothing to admire but the application of heat by the pump and by the bladders. This was the great agent in the cure; and even its application might have been better conducted.

THERE is surely no good reason for pumping the water, or letting it fall from a height on the affected part. We are told, indeed, about the influence of the friction; that “in the use of warm water, in cases of white swelling, the friction occasioned by its fall

on the part, independent of every other circumstance, may probably have a very considerable influence *.” But were there no other circumstance in the matter, it might be regarded as a most trivial remedy. This, in fact, is not the principle on which warm water produces its good effects. Neither is it “from the well-known relaxing property of moisture when conjoined with heat ; there is the greatest reason to think that a proper use, especially of warm emolient steams, would, in all such disorders, be found a very powerful remedy †.” Had it no other “property” but a “relaxing property,” it would do no good, but much harm. Did it operate on no other principle but by “friction,” the hurtful effects of motion in the diseased joint, in placing and retaining the patient in a proper

* “At least this, I think, is the principal effect which *cold water* can, in that way, produce : I have known it frequently used, and, on some occasions, with advantage.” Vide the Treatise, p. 423.

* Vide the Treatise, *ibid*.

position to undergo this "friction," would greatly counter-balance all the good it could "in that way produce."

It is the heat of the water that we must regard as the great and only agent in the matter; it is the stimulant power of the heat on which its salutary influence depends. As a powerful stimulus it excites the diseased parts, and produces the most beneficial effects; and the more forcibly it is applied, the greater must these effects be. In short, the mode, the degree, and the time of its application, are points that deserve the most minute attention; and surely they may be much better managed than by "falls of warm water on swellings of this nature."

With regard to the mode of its application, there is perhaps no one that ever has been, or ever will be employed, that can answer the purpose better than a decoction of chamomile flowers. They retain the heat for a considerable period; any joint of the

body can be completely imbedded in them when the patient is lying in a horizontal posture; the joint can be laid in the most easy position without the injury of motion, and retained in that position for any length of time.

As to the degree of its application; the flowers should be applied as hot as the patient's feeling will admit; they should be applied in considerable quantity, that they may the longer retain the heat; and when the feeling of heat is somewhat diminished, they should be replaced with others ready prepared, that the part may lose as little heat as possible in making the change.

WITH respect to the length of time in which this degree of heat should be applied, it does not seem easy to lay down any fixed rule. It might be inconvenient, or even perhaps improper, to continue it constantly, or both night and day: But, in the general, we would advise a strict and steady perseverance

in the practice, till it would seem that it is either ineffectual, or that it is removing the disease; and if this should be its effect, it may be continued, though not perhaps to the same extent, till the cure is completed.

IT is not in the common trifling way of using fomentations that we are to expect benefit in this obstinate and deep-seated disease of the joints; it is not by wringing flannel out of warm water, or any medicated decoction, and applied half an hour, or three quarters of an hour, twice or thrice a-day, that we can expect a cure, or even a palliation of the symptoms in any case of white swelling. It is by the strongest and most continued local application of heat that the nature of the living body will admit; and thus applied, it bids fair to be a most powerful remedy.

WHILE I attended the Infirmary here as Surgeon in the winter 1799, I had occasion to treat a case of the knee-joint, which, so far as I can recollect, had every appearance

of white swelling. I regret that I did not take the history of the case at the time, since I have not been able to procure it; and therefore I cannot speak of all the circumstances with precision. But I think I have a pretty distinct remembrance of the practice I employed, as well as the effects it produced.

THE fomentation by the flowers of chamomile was applied to the knee; it was kept constantly imbedded in them, at least through the day, and as hot as the feeling of the patient would admit. At the same time he had frequent doses of mercury and opium. But to these substances the cure could not be ascribed, nor perhaps any share of it; for the mercury scarcely affected his mouth, and the opium was not given in large doses. By persevering, however, in the fomentation, the morbid appearances of the joint were entirely removed, and the use of it completely recovered.

IN one word, heat applied to diseased

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joints, in this manner, produces the most astonishing effects. It brings relief from pain, though most excruciating ; and is therefore capable of producing the most important changes in the morbid condition of the joint. There is much reason to conclude, that it will be found the most powerful remedy hitherto employed in the cure of white swelling.

THIS powerful and continued action of heat, however, sometimes produces a tenderness of the skin that the patient is unable to bear its application. It is therefore necessary either to apply it in a lower degree, or to give it up for a certain period. The latter, perhaps, is preferable to the former ; and in the interim some application may be made to forward the healing of the skin.

BUT in the interim there is a still more important practice to be followed, and that is the application of pressure. This is best effected by the use of a flannel roller, while it

also produces the accumulation of heat. At all times, the moment the fomentation is discontinued, the roller should be applied, and with a considerable degree of tightness, but not to the extent of increasing the pain; and not only the roller, but additional coverings of flannel, that the highest possible temperature may be preserved.

IN conjunction with this practice, the application of heat and pressure, the joint should be preserved from motion; it should be kept in the state of absolute rest. This is a point of great importance; for there is perhaps nothing so injurious as motion of the joint. In the morning we see the patient relieved from pain, and the swelling is somewhat diminished; in the evening he suffers, and the swelling is increased, for he is exhausted by the exertions of the day; he feels an universal languor; he feels a peculiar imbecility in the affected limb; the diseased joint is farther deranged and debilitated: in the even-

ing he suffers by a teasing and an agonizing pain.

Thus, in commencing the cure of white swelling, there are three great objects to be kept in view in regard to the local treatment; the absolute rest of the joint, the application of heat, and the application of pressure. They have each their share of importance, and their conjoint operation is necessary. Heat will not effect the cure without rest, nor will rest without heat. But without the rest of the joint the powers and effects of every other remedy will go for nothing. The want of it has retarded, nay, perhaps prevented the cure of white swelling.

THIS, then, is the local treatment that we would chiefly recommend at the commencement, and during the first stage of white swelling—total rest of the joint, and a strict, steady, and persevering application of heat and pressure. But, after all, if the disease should continue stationary, or should it in-

crease, there are other remedies to be put in force.

FRICTION may be employed; and if the skin is able to bear it, it will be most advantageously employed after the fomentations. It should be done by the fire in a warm room; and to facilitate the friction, as well as to act in some degree as a stimulus, the linimentum opiatum may be used, or if it be too pungent for the skin, some oleaginous substance may be used in its stead; it should be continued for a considerable period; and, when done, the roller should be applied, as well as other coverings of flannel.

WITH regard to the use of mercury in cases of scrophula or white swelling, there are different opinions. It is said by some to be useful, and by others hurtful. It may be hurtful, indeed, if given to the extent of deranging the constitution. Thus it prevents, rather than accelerates, the healing of venereal and other sores; and more especially in scro-

phulous habits. But if so managed that it operates in a moderate degree, we should suppose that it may assist in exciting action and absorption; and may therefore prove useful in obstinate cases of white swelling. It will be best introduced by friction.

PREVIOUS, however, to the use of mercury, it may perhaps be proper to employ blisters. Much has been said of their efficacy; much more than the infrequency of the cure of white swelling might lead us to believe; yet their stimulant power is surely of some consideration.

OTHERS, again, are of opinion, that stimulating plasters are preferable to blisters. "Certainly, it is not unreasonable to suppose," says Mr Ford, "that a permanent irritation, kept over the diseased parts, may often be more efficacious than a blister, the irritation of which is only temporary, with a purulent discharge very variable *." They have this

* Vide Mr Ford's Observations on the Disease of the Hip-Joint, &c.

advantage, also, that they tend much to the accumulation of heat.

ISSUES are also highly extolled in the cure of white swelling, and especially those made by caustic. Mr Ford's Observations are written for the express purpose of pointing out the efficacy of the caustic issue, not only in producing a radical cure of white swelling, but also in forwarding the process of ankylosis. He writes judiciously, and his cases are plainly told. They give support to the efficacy of the caustic issue.

It has been disputed whether the good effects of blisters and issues are derived from the discharge they produce, or from their stimulant or irritating powers. At present I am not disposed to enquire into the merits of the question; yet I will contend, that the principle which ought to be kept in view in the cure of white swelling is to excite action and absorption in the diseased joint; that this can only be effected by the action of the

most powerful stimuli ; and that they, and they only, should be employed in the first instance, or during the first stage of the disease. Having this principle in view, the judicious practitioner will seek for those of the most powerful kind, and employ them according to their degree of importance, knowing that his patient's fate must soon be determined. He will know how to appreciate some beautiful and elegant formulæ of applications and prescriptions that are set down in books ; he will know that their effects can only be skin deep, and that they are more worthy of a writer or a practitioner in midwifery or the venereal disease, who deals in astringents for the cure of fluor albus or gonorrhœa, or of the quackery of an old woman, than any thing else.

IF by the judicious and well-ordered application of stimuli the disease is not subdued in its first stage, the suppurative stage will come, and then perhaps it is past all remedy. It must either terminate in amputa-

tion, in the death of the patient, or in ankylosis. Now it is our business to prevent the two former terminations, and to forward the completion of the latter.

For this purpose there is more stress to be laid on general than on local treatment. The constitution of the patient should still be supported by the most nutritious diet, with his moderate proportion of porter and of wine. He should have the benefit of the most salubrious air; yet the joint should still be kept at rest, treated with heat, and perhaps some other stimuli; carefully covered and kept warm, moderately compressed; and perhaps this is the most proper time for the use of the caustic issues.

THIS practice, in all its parts, is worthy of the most minute attention; for instances are not wanting of the most astonishing changes in the state of diseased joints, in which all morbid parts have been absorbed, and ankylosis formed, without the bursting or open-

ing of abscesses, and without hectic colliquative sweats or diarrhœa. The powers of nature can do much ; they can be assisted, and they can be disturbed.

THE former, however, is much more difficult than the latter. We have difficulty in rousing the powers of nature, but facility in throwing them into confusion. The instruments of surgery are powerful to this effect. In white swelling, one rash stroke of the knife undoes every thing : It determines the fate of the patient ; it brings a rapid wasting of the whole body ; it brings hectic colliquative sweats, diarrhœa, and death.

THE surgery of abscesses was wrong in its origin ; it has been destructive in its application. The old surgeons had a perfect antipathy at matter ; they viewed it as corroding and destroying every thing with which it came in contact ; not only the softer parts, but also ligaments, cartilages, and bones ; they paid no regard to the morbid condition

of the parts themselves, but ascribed every thing to the corroding quality of the matter ; they took the effect for the cause, inverting the order of the subject : Yet has this doctrine been handed down from author to author, and from book to book ; and even in the books of this very day, we find *great attacks and ravages committed* on the cartilages and bones, the *dissolution and consumption* of the former, and the *erosion and excavation* of the latter.

THUS proceeded the surgery of abscesses ; it proceeded on the supposed corroding quality of the matter ; it consists in incisions, tents, and setons, and those who are afraid of the knife are indulged in the application of caustic ; it is too mechanical both in its principles and practice ; it has been greatly too much employed ; it is applicable in some abscesses, but by no means because of the corroding quality of the matter.

SUPPURATION, or the formation of mat-

tre, is a natural, though a morbid, process. It is the effect of chemical and mechanical stimuli, of poisons and contagions, of certain states of the constitution; it is the effect of inflammation. These causes first produce inflammation, and then suppuration, though perhaps inflammation does not always intervene. Previous to some constitutional suppurations, there is perhaps no real inflammation; and perhaps this is the case in white swelling. In some instances, perhaps, the formation of matter may be retarded, or even prevented; but it is surely more easily accelerated: Yet its formation is a process of nature; and if this process is disturbed, if it is disturbed previous to its completion, the very worst consequences will and do actually ensue. The baneful effects that follow the premature opening of abscesses are not to be told. Nay, as a general principle, they ought never to be opened. Nature does her own work best: And the surgeon who talks about the corroding effects of matter, and plunges his knife indiscriminately into all abscesses,

knows only the mechanical part of his profession.

BUT in no case, perhaps, is this practice so destructive as in the scrophulous abscess. It will bear none of this sort of treatment. The free incision produces the very worst effects; and even the caustic, the seton, or the puncture, destroy every disposition to heal. The caustic is as bad as the free incision; the seton generally produces the most painful irritation, and must be withdrawn; the puncture heals, and the tumour is refilled, and though kept open with tents, there is no end to the discharge. Hæctic and every untoward symptom supervene on the opening of large scrophulous abscesses. They should never be opened but when they press on some important part, or when life is in danger by their bursting internally: but in common cases, when they burst spontaneously, and when the constitution is properly supported, they generally heal, though it be a tedious process.

AGAIN, if opening the common scrophulous abscess be a bad practice, it is still more so in those that are connected with the scrophulous condition of joints. Superficial openings are hurtful, and the opening of ligaments certain destruction. There is neither principle nor experience to support the practice: Nay, experience is most decidedly against it; it is a total bar to the formation of ankylosis; it ensures the necessity of amputation, or otherwise the death of the patient. Should any one be bold enough to bring it forward as a question, there cannot be a moment's hesitation how to decide.

THE more severe and alarming symptoms of white swelling seldom take place previous to the formation of abscesses, or rather previous to their bursting or being laid open. It is true, indeed, that there is often the most excruciating pain: but pain does not ensure certain death; and one would scarcely conclude, in reference to the pain, that there is no possibility of saving the patient, or even

of saving the limb. It is quite another set of symptoms that bring the determination of amputation, or the prognosis of death; it is great emaciation, hectic colliquative sweats, diarrhœa, and great debility, that would determine instant amputation with a view to save life: but these symptoms do not take place previous to the bursting of abscesses; or if any of them take place, it is comparatively in a low degree. They are only marked with the discharge of matter; they are only rapid in their progress with the artificial opening of the joint; after the opening of the joint, nothing remains but amputation or death.

IN the treatment of white swelling, therefore, surgery is almost altogether, if not totally, out of the question. The incision of scrophulous abscesses; the incision of the bursal ligament; the passing a seton through the cavity of the joint, or injecting it with detergent injections, as they are termed; the use of tents and cauteries—are practices more worthy the common art of farriery than of

scientific surgery. They are mechanical to a degree, and repugnant to all the operations of Nature.

It is Nature's business to effect the cure ; it is our business to assist her. Though the disease has passed from the first to the second stage ; though matter be formed in the cavity of the joint ; though the soft parts be diseased ;—yet it is not impossible but that the whole may be absorbed ; that anchylosis may take place, and that previous to any external opening. Having this in view, we treat the joint with heat and friction ; with gentle pressure and total rest, and perhaps with caustic issues. We treat the patient with the most nutritious diet ; with a natural temperature ; with the most salubrious air ; with every tonic power ; with opiates, and perhaps with the most gentle action of mercury.

Thus, if we can prevent external openings and discharges of matter, we do well ; we have some chance of bringing the joint to

anchylose. But should we fail; should abscesses, and sinuses, and discharges of matter actually take place, we have still the same object in view, the production of anchylosis.

IN this stage of the disease no difference in the constitutional treatment of the patient presents itself. The same indication still obtains, and now requires the most peculiar attention; for this is the period of danger; it is the period of severe hectic, and of every untoward symptom; it is now that we must use every effort to prevent the necessity of amputation, and save the life of the patient; every minute circumstance demands the utmost attention; every minute circumstance that can be thought or conceived to support and preserve the constitution must be brought into action. It is thus that we are to moderate the symptoms of hectic, and prevent the approach of colliquative sweats and consumption of the lungs, and every dangerous and alarming symptom; it is thus that we are to forward the anchylosing process, and

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prevent the necessity of amputation, or the death of the patient.

THE local treatment is an easy matter; surgery has little or no share in it. The surgeon stands by and sees the bursting of one abscess and the healing of another; he trusts the greater part, if not the whole, to nature; he enjoins cleanliness; he directs a soft and easy dressing, and the use of flannel rollers.

BUT there is one point of greater importance than the whole put together, at least every thing else will avail little or nothing should it be disregarded, or not regarded with the most scrupulous attention; and that is the total rest of the limb. This is proper and necessary in every stage of the disease, but peculiarly so during the progress of the anchylosing process. Without it, most assuredly, ankylosis will not take place; or in proportion as the joint is thrown into motion, this process will be proportionally disturbed and retarded. To promote and effect the

formation of anchylosis, therefore, all motion of the joint should be prevented ; and if it be in the lower extremity, it should by no means suffer the weight and pressure of the body.

It may be urged, however, that it is impossible to put all these rules in practice ; that they are inconsistent with the necessary exercise of the patient ; and that he will neither submit to confinement nor to rest in the horizontal posture. But exercise to a patient in his condition is by no means so necessary as has been supposed. Nay, independently of its being hurtful to the diseased joint, if not most cautiously employed, it is manifestly hurtful to the constitution ; for it exhausts the strength, increases the hectic, diminishes the appetite, and in every respect does much harm. The body labouring under white swelling and a carious joint is scarcely bettered by exercise ; and if the patient is placed in a situation for good air, it is sufficient while he is kept as much as possible in the

horizontal posture. In short, the privation of motion in the joint is indispensable to the formation of anchylosis; or in proportion as it is kept at rest, there is proportionally the greater chance that this process will be effected. It is a point that cannot have too much attention; it is of the very last importance; were it put in due force, there would be fewer mutilations, and fewer deaths. If there be one surgeon in existence who, for any purpose, would harbour the most distant idea of breaking or tearing up an anchylosed joint, be the anchylosis little formed or much formed, half-formed or wholly formed, or whatever may be "the actual state of the parts," it may be said concerning him, that he has little understanding of the subject; for it is no less true than obvious, that anchylosis, though "inferior to the perfection of a cure, is yet far preferable to a fatal termination."

THIS termination is most devoutly to be wished in the last stage of white swelling; and in this stage of the disease it is to effect

this termination that all our efforts ought to be directed ; for by this termination the patient's sufferings are done away, and his life is preserved. But if the joint refuses to ankylose, amputation is then necessary to save life ; yet this operation is neither to be rashly nor unadvisedly performed.

COULD we survey at one glance all the subjects who have been afflicted with white swelling, we should most probably find a greater number with an ankylosed hip-joint than with an ankylosed knee ; or rather we should find a greater number with an ankylosed hip-joint than with two legs. Now to what can this be owing ? Can it be owing to any difference in the nature of these joints that the one is more disposed to ankylose than the other ? or, Can it be owing to this that the one is within the reach of the knife and the other not ? The wrist, the elbow, and hip-joints, ankylose ; and why should not the knee-joint as well as the rest ? We strongly suspect that the knife is a powerful

cause of preventing ankylosis in the knee-joint.

It must be admitted, however, that it is not the sole and only cause ; for there are other causes arising from the different situations of these joints. The knee-joint is subjected to pressure and motion, while the wrist and elbow joints are subjected to neither. At all times they can be kept at perfect rest ; but in the common exercise of the body, the knee-joint is necessarily subjected to both pressure and motion. These causes not only increase and aggravate the disease, but also disturb and prevent the ankylosing process. Hence it is that the wrist and elbow joints are more frequently ankylosed than the knee ; yet, after all, we strongly suspect that the knee-joint is too frequently amputated.

THE hip-joint is subjected to both pressure and motion, and in a higher degree than the knee-joint ; for in every motion of the trunk there is a corresponding motion in the

hip-joint : yet this joint is frequently anchylosed ; it is frequently anchylosed after years of disease : it is not within the reach of the knife.

YET, says a modern writer, “I have never known an adult subject in whom this species of anchylosis was completed in the knee-joint *”. But on this point, and chiefly as a sort of hint to some surgeons who seem much inclined to the early use of the knife, we beg leave to bring forward the following case.

“MRS MORTON, at No. 138, Swallow Street, a thin, delicate woman, *thirty years of age*, subject to no particular chronic disease, was seized on the 5th of August 1789, in the night, with a violent pain in the knee, attended with a fever, which was considered as rheumatic :

* Vide a Treatise on the Morbid Affections of the Knee-joint, by James Ruffel, F. R. S. E. Fellow of the Royal College of Surgeons, and one of the Surgeons to the Royal Infirmary of Edinburgh.

the following day, finding herself unable to walk, and that her knee was much swelled, she applied to an apothecary in the neighbourhood ; by whose advice, she was bled in the arm, and had six leeches applied to her knee ; fomentations, cataplasms, and a volatile embrocation were also used to the part affected.

“ On the 20th of August, she was recommended to the Westminster General Dispensary, and the knee was found to be considerably swelled, exceedingly painful, incapable of the least motion, or even of bearing the pressure of the bed-clothes : there was no external inflammation, but evidently a collection of fluid in the joint. I directed leeches to be again applied, and cloths dipped in a strong solution of sal ammoniac to be constantly kept wet on the knee ; gentle saline laxative medicines were also used, as she had a symptomatic fever. This method having been continued for ten days, without producing any good effect, the solution of sal am-

moniac was left off, and the part was rubbed twice a-day, with half a dram of the strong mercurial ointment, to which were added five grains of camphire; during this treatment, the swelling in a small degree diminished, but the pain in the joint continued.

“ON the 15th of September, I rubbed the lapis infernalis, above and below the joint, so as to produce an eschar, at least one inch in diameter, and formed an issue in both places, capable of holding ten or twelve peas.

“ON the 16th of October, there had been no benefit derived from this management of the case, except that the fluid in the joint seemed to be in some measure absorbed. The pain in the knee was still violent, the leg and thigh much wasted, the ancle œdematous, and the slightest motion of the joint was attended with the most excruciating pain. The friction of the mercurial ointment was continued, and the issues discharged freely.

“NOVEMBER 10th, the same plan was continued, with the occasional use of the bark, as she was inclined to colliquative sweats at night. The limb began to contract with the knee bent, a position which usually takes place in the white swelling of this joint; she kept it, however, resolutely extended, counteracting the tendency to flexion by bolsters placed underneath the knee.

“ON the 20th of December, the swelling of the joint was abated, her general health was much mended, the limb was still wasted; but by grasping her thigh with both hands, it was found that she was capable of moving the whole extremity; the foot was affected by this motion, being turned inward or outward, as she directed the rotatory motion of the thigh; a proof, that an anchylosis was forming in the knee-joint; she continued to preserve a horizontal position, and to keep the limb steadily extended.

“ON the 18th of January, 1790, she at-

tempted to get out of bed; but in consequence found the knee much worse, and the symptomatic fever renewed.

“BEING now sensible, that her cure depended principally on rest, she lay quietly for two months longer; at the end of which period she was occasionally taken from the bed, but many months still elapsed, before her limb was in the least serviceable. She walked afterwards for eighteen months with crutches; and her recovery seemed to be retarded by some unfortunate circumstances. The husband was poor, and his distress obliged him to move his family to different parts of the town; she was twice pregnant during her illness, and she observed to me, that her knee never grew stronger, when she was with child, or giving suck. She was once recommended to dry up her issues, but found the knee in consequence much weaker. She at several times applied to irregular practitioners, who advised her to endeavour to

move the joint, and administered their specific oils for that purpose.

“TIME, however, has satisfied her of the necessity of preserving the firm coalescence in the joint, which nature has formed. The limb is perfectly anchylosed, the union between the condyles of the thigh bone and the upper head of the tibia, being complete. She is capable of walking several miles in the day, without much inconvenience, but does not yet trust herself in the street without a stick, although in going about the house, she does not avail herself of that assistance: she is now accustomed to the inconvenience of a stiff joint, but in walking, she cannot move the limb in a plain rectilinear progression, describing, as it were, the portion of a circle, much in the same manner as those do who have a wooden leg*.”

* Vide Mr Ford's Observations on the Disease of the Hip-Joint, &c.

Now, reflect on the history of this case, and reflect on it with attention; for it proves no less than six most important things. *First*, it proves the necessity of rest, or a total cessation of motion in the joint, to forward the anchylosing process, and to admit of its completion. *Secondly*, it proves that the knee-joint will anchylose in the extended position, preserving the seemliness and usefulness of the leg. *Thirdly*, it proves, that though there be a collection of matter in the joint, indicating a carious state of the bones, that this matter may be absorbed, and that the knee-joint, even in the adult subject, is susceptible of complete anchylosis. *Fourthly*, it proves that "the suppuration" may not "be so extensive, and so long continued, before the cartilages can be destroyed, and the extremities of the bones united; that the patient's strength is insufficient to hold out till the process be completed." *Fifthly*, it proves that "all adult patients, in whom the cartilages of the knee-joint are separating by suppuration," neither "die under the progress of the

attack," nor "are obliged to submit to amputation." And, *lastly*, it proves, or gives strong suspicion, that the knee-joint is too frequently amputated.

For the history of the case before us holds forth an anchylosis of this joint under the most unfavourable circumstances. The patient, a thin and delicate woman, thirty years of age; twice pregnant during her illness, or giving suck; struggling with poverty and its attendant ills, with the many anxieties and turmoils of a family; obliged to move with her family to different parts of the town; breathing the contaminated air of a large city: In short, struggling with many unfavourable circumstances, with many causes to derange her constitution, and few to invigorate or support it; and withal a thin and delicate woman—yet did this woman's joint anchylose, preserving the seemliness and usefulness of her leg.

IN what case, then, should we despair of

the formation of anchylosis? or in what case should we rashly lop off the leg? Anchylosis has been formed previous to the bursting or opening of abscesses; it has been formed after they have burst and discharged for years; it has taken place under the most unfavourable constitutional circumstances and treatment; it is a process of Nature, and a process which she often unexpectedly effects; a process with which we have no right to interfere till Nature has failed in her work; and then, and not till then, is the surgeon warranted in his interference.

YET it is much to be feared that this impression, and this language, has gone too much abroad—the disease is incurable, and therefore the sooner the limb is amputated the better. We judge thus because limbs have been amputated in the very first stage of white swelling; where there was no real symptom to determine the necessity of amputation; where, if the limb had been spared, at the very worst the disease

might have terminated in anchylosis; where there was no sure grounds at least to draw a contrary conclusion: in short, limbs have been amputated in the face of every principle of sound pathology and good surgery. But if there be one case on record where the use of the joint has been preserved, or even one case where anchylosis has taken place, and the seemliness and usefulness of the limb preserved, early amputation is a most unwarrantable practice.

AMPUTATION, therefore, is not to be performed in the first stage of white swelling, in case it be possible to preserve the use of the joint; it is not to be performed in the second stage, or after the formation of matter; for this matter may be absorbed, anchylosis may take place, the use of the limb may be preserved; it is not to be rashly performed even in the third or last stage of the disease, because anchylosis may take place after the discharge of matter for years; in short, it is only to be performed when there is no probabi-

lity of the formation of anchylosis; when there is reason to conclude that the powers of the system are unable to perform the anchylosing process; when life is in danger, we would call surgery to aid.

YET still the question of amputation is a nice and a delicate question. We have grounds of hope, and grounds of fear. We have hope that anchylosis may yet take place; and we have fear, that if the operation be too long delayed, and the constitution be too far weakened and deranged, that adhesion may not take place; that there may be opening of the stump, dissolution of the soft parts, bursting of arteries, oozing of blood, and exfoliation of the bone; that the patient may die under wasting, and hectic, and consumption of the lungs; that he may not only lose his limb, but his life.

IF there be any principle held forth concerning the question of amputation in the case of white swelling, it is this: We are not

to operate too early, lest "the patient, from being in high health at the time of the operation," should be "thrown into a smart inflammatory fever* ; or, which is the same thing, we are not to operate till "the case has been declared desperate ; for by this time we may be assured that the patient's strength will be sufficiently reduced to obviate any risk of his suffering from too violent an *attack* of symptomatic inflammation†."

Now, whoever heard of a patient "in high health;" or of a patient "in high health," yet at the same time diseased? Health and disease are surely two very different things, and cannot co-exist. But of all things, how can a patient be "in high health," yet labouring under white swelling? This is surely no trifling disease ; it is not only a constitutional but a local disease ; it is a disease of morbid and languid action ; it is a disease of derangement or debility.

* Vide Mr B. Bell's Treatise.

† Vide Mr Ruffel's Treatise.

WE run no risk therefore of operating while the patient is "in high health," operate at what period of the disease we will. But there are good reasons why we should not operate at an early period of the disease, may not even till "the case has been declared desperate." Yet neither can we altogether subscribe to this rule; for some might declare too slowly, others too hastily, and others scarcely at all. Thus should we be still involved in "this dilemma, which often occurs in practice, where by operating prematurely the patient loses his limb without necessity, or by delaying too long, his life; and thus he is equally exposed to suffer," either by the too hasty decision, or by the want of decision; "by the improper precipitancy or procrastination of the surgeon*."

BUT before he makes any declaration on the subject, he should surely inquire into those matters which regard the patient's

* Vide Mr Ruffel's Treatise.

strength, as well as every other the most minute point, whether of general or local consideration. He should do these things, having first a view to the formation of ankylosis; and then a view to the adhesion of the stump, should he be obliged to operate; for if the stump does not adhere, most probably the patient will lose his life.

WERE there no other principle or object in view in delaying amputation than a reduction of "the patient's strength to obviate any risk of his suffering from too violent an *attack* of symptomatic inflammation," there would be none, or worse than none: For than this there is not a greater truth in pathology, that in the sound and healthful body a wound adheres; but in the "tainted" constitution, in the constitution greatly impaired in strength, or deranged and debilitated, it opens, and becomes a malignant or ill-conditioned sore.

BUT suppose that "high health" disposes

to inflammation ; that in proportion as the body is healthful or vigorous, inflammation will be the more severe, the more “smart,” the more “violent,” the less “flight,” the less “transient,” or any thing you please ; yet “by this time,” by the very commencement of white swelling, nay, previous to its commencement, “we may be assured that the patient’s strength will be sufficiently reduced to obviate any risk of his suffering from too violent an *attack* of symptomatic inflammation.”

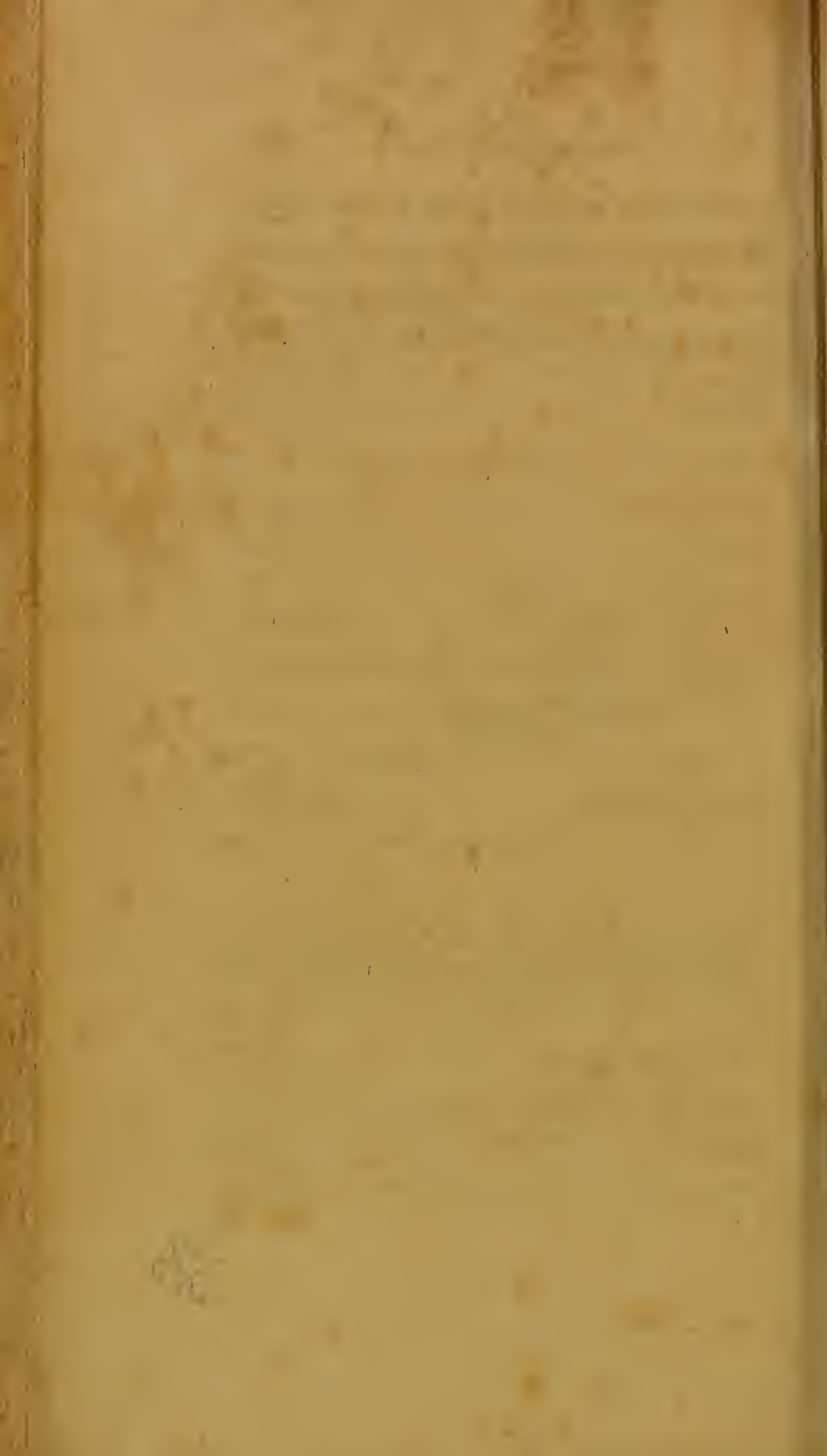
THIS is just the very morbid condition of the scrophulous body, of the body predisposed to, or labouring under white swelling : it scarcely admits of the healthful or adhesive inflammation ; and the more it is deranged or debilitated, the longer it has been diseased, the inflammation will be the more severe, the less “flight,” the less “transient,” the stump will be the less disposed to coalesce, or to adhere and heal.

THE question of amputation, therefore, is a nice and a delicate question. It rests with the sagacity and judgment of the practitioner to decide, according to the strength or weakness of the patient; according to the degree of force in one and all the functions; according to the degree or severity of the constitutional as well as the local symptoms; by a cautious and discreet induction of every, the most minute point, to judge whether there be a greater chance or probability of the formation of anchylosis, or the death of the patient; or to determine whether he should continue to assist the powers of nature to the production of anchylosis, or whether proceed to the amputation of the limb.

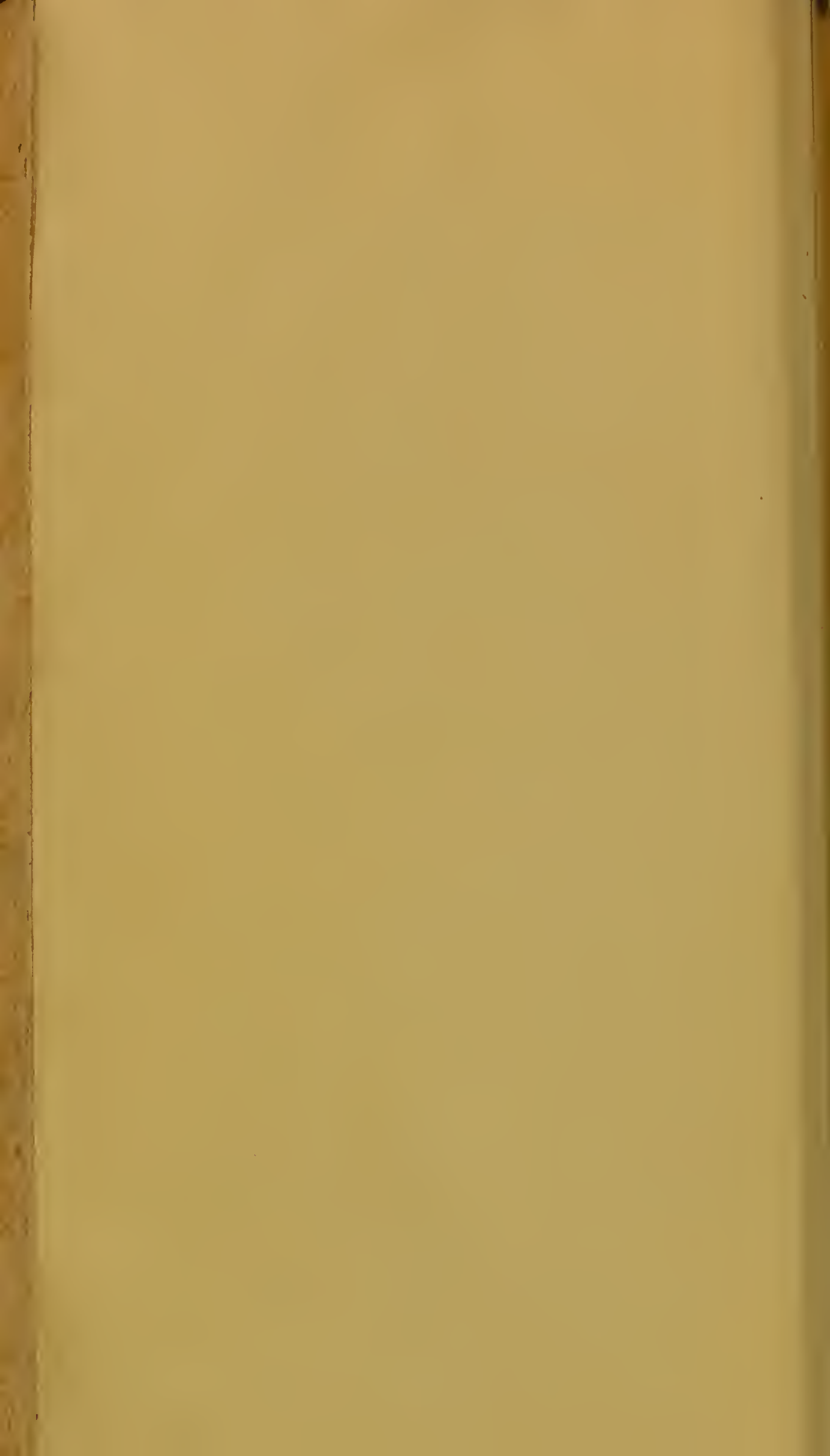
THE termination of this most severe and formidable disease is not more modified by the immediate treatment, than by the treatment during the whole course of its progress. If the constitution be supported; if its energies be not destroyed by bleeding and other evacuations, by antiphlogistic regimen and

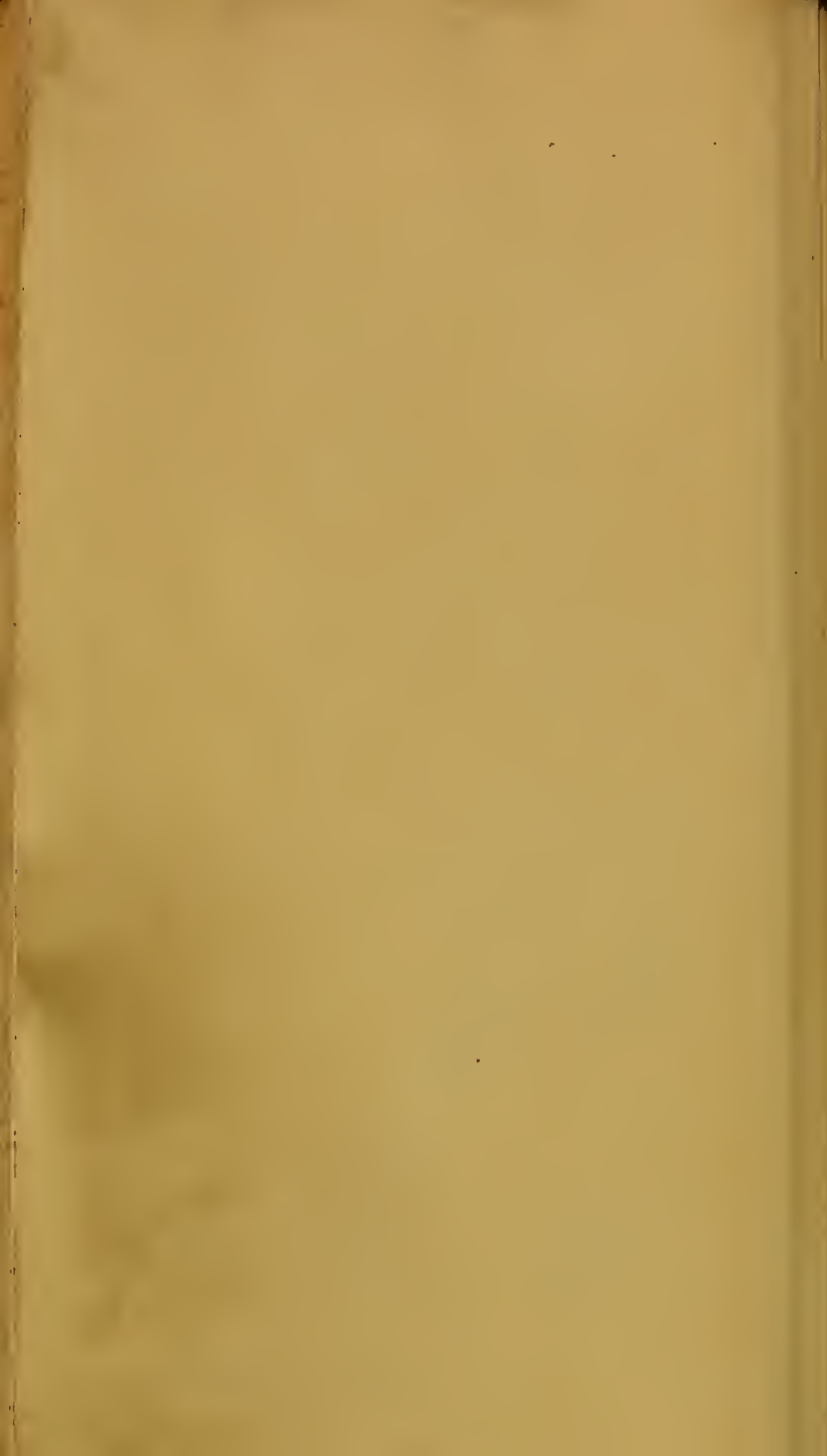
antiphlogistic practice, there is the greater probability that the joint may be brought to ankylose. And who would not prefer a stiff joint, even though somewhat bent, to a wooden leg?

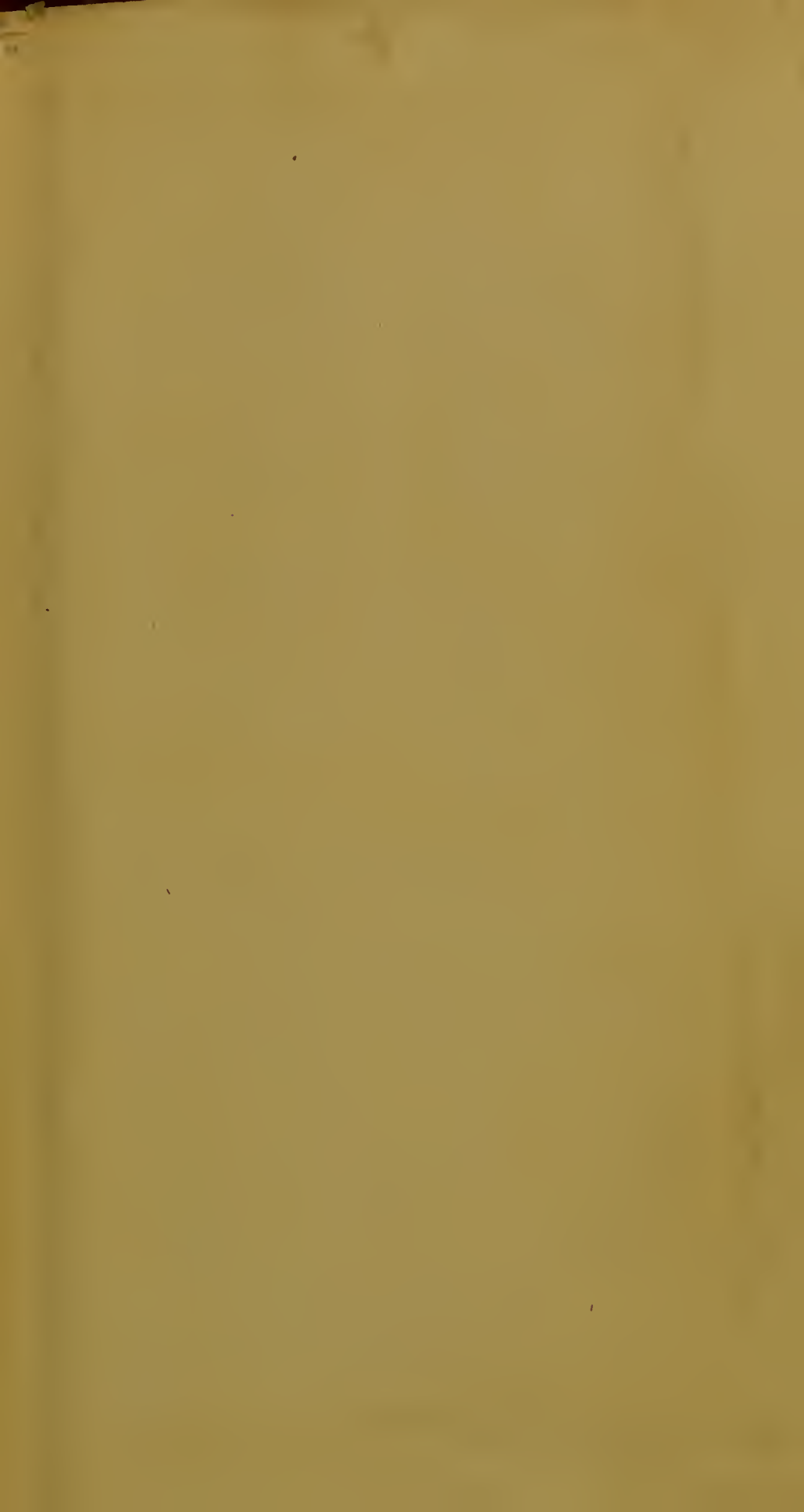


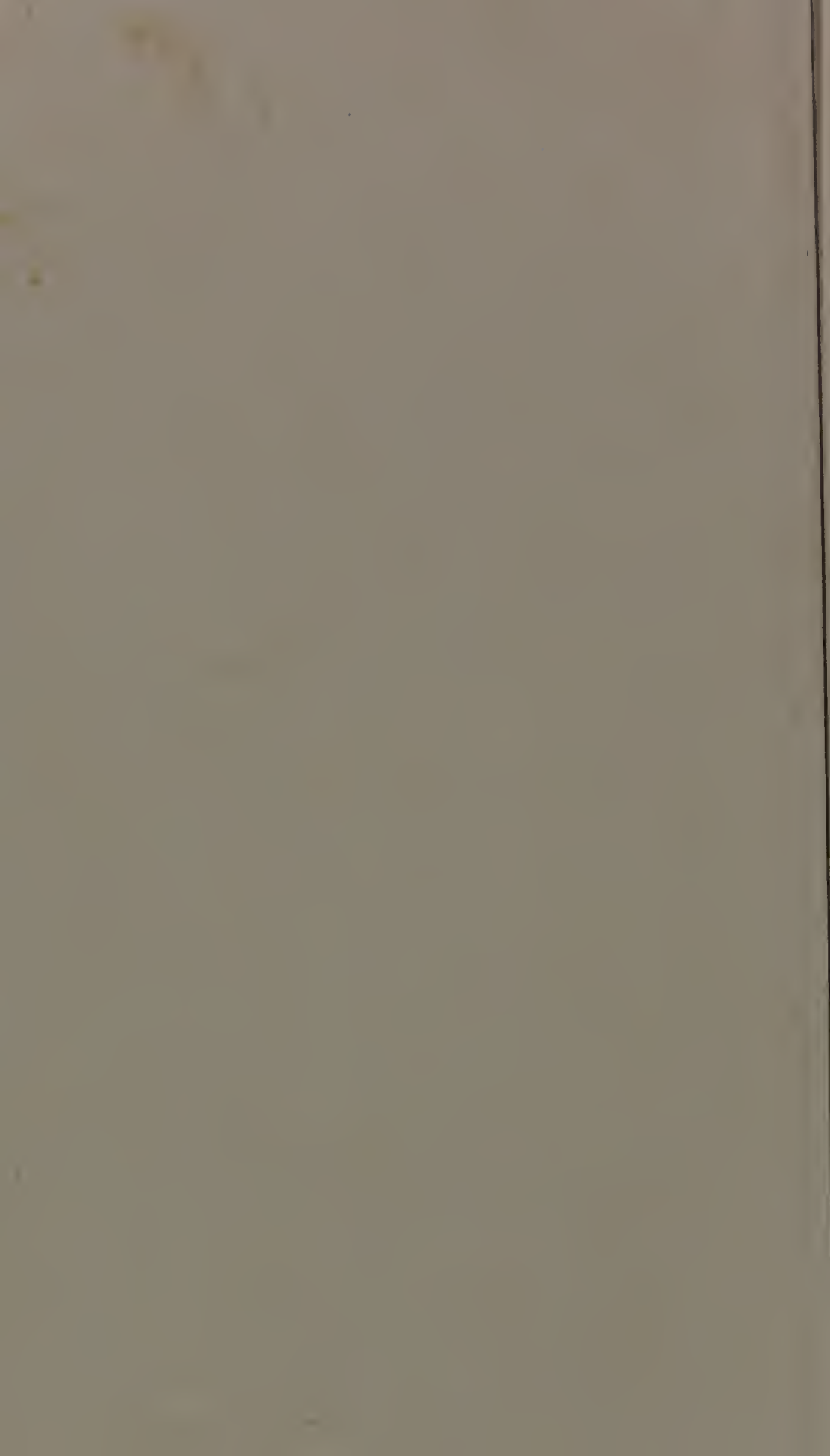


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